The Mining Journal

Established 1835 — Railway & Commercial Gazette

Vol. CCXLI No. 6167 — LONDON, OCTOBER 30, 1953 — PRICE 8d

The Mining Journal

Established 1835

Vol. CCXLI No. 6167 LONDON, OCTOBER 30, 1953 PRICE 8d

CONTENTS

Notes and Comments	497	The Mining Markets	507
From Our Western United States Correspondent	499	Company News and Views	508
Methods and Equipment used at the Grängesberg Mine, Sweden	500	Company Shorts	509
The Trend Towards Larger Earth Moving Equipment in the United States	502	Company Meetings and Announcements	511
Activities on Canadian Uranium Properties during 1952	503	North Kalgurli (1912) Ltd.; Amalgamated Tin Mines of Nigeria Ltd.; Naraguta Tin Mines Ltd.; Rhodesian Anglo American Ltd.; Beralt Tin and Wolfram Ltd.; Waihi Investments and Exploration Ltd.; Anglo-Transvaal Cons. Investment Co. Ltd.	
Technical Briefs	504		
Metals, Minerals and Alloys	505		

Published by The Mining Journal Ltd., at 15 Wilson Street, Moorgate, London, E.C.2. MONarch 2567 Subscription £2 per annum

NOTES AND COMMENTS

Restoring Personal Responsibility to Colliery Management

In the course of his review on the coal situation in the House this week the Minister of Fuel and Power made what may prove to have been an announcement of major importance regarding the Board's future organizational policy. He indicated that the Board had come to take the view that in its organization there were two important objectives to be achieved. First the devolution upon the colliery manager of the maximum responsibilty for the day to day management of his pit, and secondly the establishment of the area as the proper unit of higher management control.

Having regard to the various enquiries which have been made in the past into the organization structure of the Coal Board with very little practical consequence, the present announcement, though welcome, must inevitably at this stage be accepted with some mental reservation. Indeed it is clear that the Coal Board's own thinking on the subject has not yet been fully worked out, as the Minister went on to say that the Board intended to seek advice and help from those who had experience in other large industrial enterprises and from the T.U.C.

The Minister's statement does however give explicit recognition to the need for strengthening the direct authority of the area manager and below him of the mine manager, which has been so often undermined both by excessive centralization in the higher levels of the Coal Board organization (which has results in a failure to delegate authority down the line) and also by the disproportionate and misplaced authority which has come to be exercised by what should be essentially "service" branches of the organization, but which have been allowed to develop a quasi-executive authority of their own. It is these two developments which together have produced the state of frustration to which many of the industry's best colliery managers have been reduced.

There is no particular difficulty in blue-printing a revised Coal Board organization structure which would, at any rate in theory, restore full authority to the manager at each level. To make such a structure work in practice is, however, an entirely different problem depending not so much on the theoretical soundness of the organization structure itself as upon the attitude of mind which animates it. This is a problem common to all nationalized undertakings, as indeed it has long been to the Civil Service department. Just as the withering influence of Treasury control has inevitably resulted in the widespread disinclination among civil servants to take a decision which can appropriately be referred back to a higher level, so there can be little doubt that this same influence has been at work among the personnel of the nationalized industries, so many of whom are becoming civil servants in effect if not in fact.

The heart of the matter is, of course, the virtual absence of the kind of incentives which motivate executives in private industry, coupled with the failure to substitute others equally compelling. Whatever may be the formal status of the administrative and managerial ranks of the Coal Board, the fact remains that they are, in practice, substantially protected from the threat of dismissal on grounds other than misconduct, or gross inefficiency. Beyond this, the stimulus of personal profit is largely absent, as compared with private industry where executive remuneration is frequently related to the current success of the undertaking by bonus payments, profit sharing or other means.

To be blunt, the knowledge that ineffective performance is unlikely to lead to dismissal, and that exceptional effort or the shouldering of avoidable responsibility carries no particular financial reward (aside, perhaps, from somewhat more rapid promotion) must produce in all but the most ambitious servants of the Coal Board an inclination to play safe in the knowledge that, so long as their records are clean, they will through the natural process of death and promotion be assured of progressive advancement until they attain their pre-destined and pensionable haven.

In our view any talk of Coal Board reorganization is largely a waste of time until this problem of restoring personal incentive to the service has been solved. We are not among those who believe that in a nationalized industry this problem is insoluble, but we do believe that it will remain so until at all levels in the organization the delegation of responsibility carries with it the delegation of a corresponding degree of authority, together with an inescapable compulsion to exercise that authority, so that failure to do so will be accounted a failure of duty and dealt with as such.

Naturally such an attitude can only be injected gradually into so large an organization as the N.C.B., and it would be the grossest injustice to a group of men, the great majority of whom are in any event doing their best within the limits of the existing system, to propose the enforcement of such a policy until precise definition of duties and

of the limits of authority have been established at all levels and in all branches of the organization. It is at this point that there arises a second and equally necessary prerequisite for the successful decentralization of authority within the regions. This, as we have already indicated, concerns the relationship alike at area and mine level (and at intervening sub-area levels) between the area or mine manager (who is—or should be—primarily concerned with getting production now and/or preparing to get production in future) and the representatives at each of these levels of the various functional or "service" departments such as personnel, safety, accounting, purchasing, etc. Owing to the widespread failure, not least at headquarters, to understand the essential nature of this relationship, it has been the corrosive effect of the misapplied authority of the service departments which has done so much to undermine the authority of the manager who must, if he is to manage at all, ultimately be solely responsible for the performance of his unit. To be no more than the co-ordinating chairman of conflicting specialist services can only lead to inertia. He must have the authority of a commanding officer and be able to act like one.

There is thus an urgent need for a clear understanding by the members of the Coal Board itself, followed by indoctrination of all ranks, regarding what should be the proper relationship between the manager through whom at successive levels the direct chain of command should flow, and the various specialist services, whose nature should be essentially advisory or "staff," using this word in its military sense. The staff officer is essentially a specialist deputed to assist the commanding officer—i.e. the manager—in the technical execution of his duties. Such staff officers may in fact be exercising executive authority but, and this is the critical point, it must be clearly understood by all concerned that they are exercising the delegated authority of the manager to whom they are attached, rather than a parrallel conflicting authority of some service department.

There must, of course, be a chain of authority running down through the service departments themselves, just as in the army the medical, pay or other specialist corps have their own internal administrative machinery. This, however, must be designed solely to secure the maximum technical efficiency of the members of the department at each level in the performance of the specialist services they render to the manager to whom they are attached, and chain of authority within the specialist department must not be confused with, or be allowed to interfere with, the executive authority of the manager whether at area or mine level.

All this means in practice that the manager should have at his disposal the technical advice of representatives of the various specialist branches, that it should always be the duty of these specialists to tender their technical advice but that the manager would be free to accept or reject this advice. In practice the manager would, of course, normally tend to rely on it but he must be made to do so on his own responsibility, and not to plead acceptance of specialist advice as an excuse for failure. The parallel between the mine manager and the ship's captain is one which has often been drawn, and not least is this a valid analogy in that both require competent technical advice, but to the former no less than the latter must be left the ultimate discretion to accept or reject this advice. Only thus can the necessary clear cut definition of authority and responsibility be maintained throughout the Coal Board's chain of command.

Representatives of service departments at mine level who felt that their services were not being properly utilized by the mine manager could of course seek redress by referring the matter back to their own departmental superior at sub-area or area level who would in turn take the matter up with the manager at that level; although here again the latter would be ultimately responsible for the manner in which the dispute should be resolved.

The co-ordination of line and staff authority is not an easy concept to inculcate into any organization, let alone one as large as the N.C.B., and it is moreover one which calls for a high degree of self-discipline on the part of all concerned. The development of the attitude of mind which it requires, no less than the devising of effective executive incentives, is, however, essential to the exercise of responsible management without which the coal industry of this country must inevitably continue to flounder.

Strikes Reduce Mining Activity in Northern Ontario

Labour unrest in various parts of the world, discussed briefly in these columns last week, was one of the principal topics selected for comment by our Canadian Correspondent in his most recent letter dated October 17 (part of which is published below). Our Correspondent, writing from Timmins, which can fairly be described as being on the outskirts of the Hollinger and McIntyre Porcupine Gold Mines, is the civic centre of the Porcupine goldfield, and has been directly affected by the current strike wave which is spreading eastwards into the province of Quebec.

Labour strikes have reached serious proportions in the mining fields of Northern Ontario and in North-Western Quebec. Mining in the Porcupine gold field of Ontario, leading gold producing area of the Western Hemisphere for the past quarter century, is almost at a standstill. Labour unions have demanded higher wages, shorter hours, plus insistence that the companies collect dues from all employees for the benefit of the union. It is this check-off system on dues which has aroused chief opposition of the operators, plus the fact that the vast multitude of shareholders who in reality own the mines are opposed to any action calculated to increase the cost of producing gold. Admittedly gold mining as an industry is on the brink of disaster, caught as it is in the jaws of a vice which has already almost closed—one jaw being the high cost of production and the other jaw being the fixed price of gold.

In the city of Timmins in the heart of the Porcupine gold mining area there is an atmosphere of gloom. Apart from gold mining, there is no other industry. During recent weeks there has been a considerable exodus of workmen and their families who have lived the greater part of their lives in this gold field. Now they are moving away in anticipation of an unusually long idle period at the gold mines of Porcupine—and with the outward trek increasing daily. At the time of writing there is nothing indicative of an early settlement. Meanwhile the strike fever has spread eastward into the province of Quebec and has already reduced mining operations in that province to a shadow of normal. With the approach of winter the outlook is forebidding. There is uneasiness among merchants and business men and there is growing evidence of despondency among workers themselves, many of whom appear to believe they have been manoeuvred by radical leadership into a position which may become untenable and may even threaten loss of their homes. In all the years which *The Mining Journal* has been in close association with the mining industry of Northern Ontario and North-Western Quebec from its infancy of 50 years ago right up to the present, the challenge between union and management never appeared more ominous than it does at this moment.

Malayan Income-Tax Rates May Rise Next Year

The Straits Times last week made the suggestion that the Malayan Government was considering proposals to raise income tax rates for individuals and companies some time next year.

The proposals supposedly under consideration by the

Malayan Board of Income Tax, include an extension of the present sliding scale tax rates above the present maximum of 30 per cent currently payable on all income exceeding Malayan $50,000.

The Straits Times suggests that the rate for companies may be raised to 45 per cent and that individuals might be faced with a new sliding scale double the existing rate.

It would not be difficult to make out a strong case for the Federation Government raising the incidence of taxation. The Communist menace alone ought to provide sufficient reason to explain why the Government has very little scope for reducing its own expenditure. On top of this the Malayan Exchequer must be experiencing a considerable drop in revenue from tin and rubber. But an equally strong case can be made out for the tin and rubber producers whose efforts under exceedingly trying, and indeed dangerous, conditions have enabled the Government to largely finance the cost of the country's preparations against the Communists. Moreover, and quite apart from the fact that their War Damage claims were all scaled down, producers of both tin and rubber must embark on sizeable capital expenditure schemes. Tin mining companies in particular must resume prospecting after a 20-year lapse as well as purchasing more dredges and other capital equipment if they are to continue to operate in the face of poorer grade of ground and low average price for their product.

Thus the wisest course would seem to be—if tax liabilities must be increased—to at least provide the tin and rubber producers with a compensating relief either by subsidies, a differential tax structure, or a balancing reduction in export duties. In any event, some kind of compensatory relief is necessary to offset a higher tax charge if Malaya's twin geese are going to feel sufficiently interested to keep on scratching for their own interests as well as Malaya's.

Revival of Gold Subsidy in Rhodesia ?

The possibility of the Southern Rhodesian Government reinstituting some kind of limited subsidy scheme to assist its gold mining industry became a matter of practical politics earlier this month when Mr. R. S. Garfield Todd, the Prime Minister, said that the Southern Rhodesian Government would be prepared to consider subvention for the gold mining industry if such a scheme was put up to it. The Prime Minister gave this assurance in his opening address to the Annual Congress of the Rhodesian Mining Federation at Gwelo and promised that the Government would do its utmost to promote the industry's progress, though he would not go so far as to say that a full subsidy scheme could be contemplated.

Southern Rhodesia is, of course, the home of the small gold producer and under the present conditions of rising costs, pressing against a fixed gold price, the country's gold mining industry—apart from a few of the well-known high grade gold mines—can hardly be called prosperous. It is, therefore, encouraging that the Government has rightly assessed the current situation and is prepared to meet the gold mining industry half way.

Anglo American to Direct Kafue Power Project

It was announced earlier this week that the Kafue River Hydro-Electric Authority has decided to appoint the Anglo American Corporation of South Africa as consulting engineers in-chief for the construction of the £30,000,000 Kafue power project.

Commenting on the decision, Mr. R. A. Nicholson, chairman of the Authority and Economic Secretary to the Government, said that the Authority felt that the task of co-ordinating the construction of this giant scheme could not be placed in better hands. The Anglo American Corporation, he declared, had on its staff the highest quality of consulting and engineering skill with which to direct the scheme, and the Corporation would be entirely responsible to the Authority for the technical construction of the power scheme.

The decision will most certainly be deemed a wise one for it is in the best interests of the Anglo American Corporation of South Africa to complete the scheme as quickly and efficiently as possible, bearing as it does on the successful expansion scheme of the Copperbelt companies under its control. As Sir Ernest Oppenheimer pointed out recently, present plans are based on the assumption that the additional power supplies resulting from this great project will become available in the early 1960's.

Western United States

(From Our Own Correspondent)

Portland, Oregon, October 23.

Preparations at San Manuel's huge deposit in Arizona are proceeding systematically with the expectation that by 1957 production will be achieved at an annual rate of 70,000 tons of copper and 6,000,000 lb. of molybdenum, which is expected to be maintained for 50 years. Latest moves are a contract for a 21 mile transmission line to bring commercial power to the operation, supplanting the company-operated diesel-electric plant, and a ten year contract with Phelps-Dodge Refining Co. to refine the output of the San Manuel smelter.

Empire Zinc's Eagle mine at Gilman, largest zinc producer in Colorado, operating a 1,000 ton underground mill, has closed down both mine and mill for an indefinite period. Employees went on strike on August 31 for a substantial increases in wages and the management felt there was no object in negotiations which would result in higher production costs under present unfavourable conditions in the zinc industry so ordered a complete shutdown.

300 TON FLOTATION MILL FOR TUNGSTEN ORES

American Chrome Co. has begun production of concentrates at its Mouat mine. At present the mill is treating 500 tons daily but this will be doubled when present construction plans are completed. The Mouat mine is on a large deposit of low grade chromite in Stillwater County, Montana, which was developed extensively during World War II but did not get on sustained production.

Minerals Engineering Co. is building a 300 ton flotation mill for treatment of the ores from its tungsten mines at Glen, Montana. Concentrates will be shipped to the refinery of the Salt Lake Tungsten Co., owned jointly by Minerals Engineering and Sylvania Electric Co. Hanna Nickel Smelting Co. announces that it will have one electric furnace in operation pouring ferro-nickel at its operation at Nickel Mountain in Oregon by September, 1954. The other three furnaces included in the plans will be in operation by the end of the year.

Kerr-McGee Oil Industries, through its Navajo Uranium division, will construct a plant at Shiprock, New Mexico, for the Atomic Energy Commission for processing the uranium ores mined on Navajo Indian Reservation in New Mexico. This is the tenth plant either in operation or under construction in the Colorado Plateau region. There has been much publicity lately over the operations of an independent uranium prospector, Charles A. Steen who, in the face of years of discouragement, recently made a sensational strike near Moab, Utah, on the Colorado Plateau.

It appears that Mr. Steen, in his Mi Vida mine, has really made the outstanding discovery of this region, which has already produced ore of a value in excess of $1,000,000.

Methods and Equipment used at the Grängesberg Mine, Sweden

The following article describing in broad outline mining operations at the Grängesberg Mine in Sweden, and some of the more interesting items of equipment in use at the mine, concludes the account by our assistant editor, R. Bruce Dunfield, of his impressions gained during a tour of Middle Sweden at the beginning of this month in company with several other representatives of the British technical Press. This most interesting and informative tour was sponsored by the Atlas Diesel Company, Sweden.

The Grängesberg Mine is owned by the Trafik A/B Grängesberg-Oxlosund, and although considerably smaller than either Kiruna or Malmberget, has a Government restricted output of 1,500,000 tons per annum. It must therefore be regarded as an important mine, and represents resources as large as the other central Swedish iron ore mines combined.

Electric trolley locomotives

The Grängesberg orebody is sharply defined and is fairly homogeneous, and present estimated ore reserves are 100,000,000 tons, with some 50,000,000 tons already having been mined. Since the early years of the present century underground shrinkage stoping was in use until a sub-level caving method was introduced in 1946. This is now the main operational method employed. The sub-level caving method was introduced to avoid heavy falls from the hanging wall.

CURRENT MINING METHODS

The mine is divided into blocks 150 ft. in height, and in the operational method employed slices 16 ft. in size are removed downwards, the hanging wall readily caving to fill the void. Ore passes are in the footwall, and the broken ore is loaded into cars by Atlas Diesel shovel loaders, of which over 40 are at present in use. On the 270 metre level the main ore pass terminates in a compressed air operated chute gate which feeds the ore into large Granby type cars hauled by electric trolley locomotive to the Central Shaft ore pockets. An output of 800 tons per man shift for loading, transporting and tipping into shaft pockets has been achieved. The ore is raised to the surface in 14-ton skips up the Central Shaft.

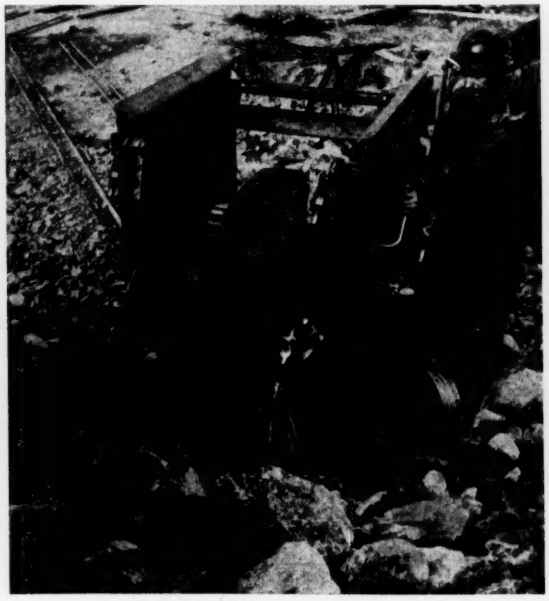
So far as surface installations are concerned, a feature of the mine offices is the mineral specimen room, together with the basement library where charts are maintained showing the relationship between wages and output per man shift. A remarkable rise in output per man shift was recorded between 1947 and 1952, during which period production increased from 23 tons in 1947 to 85 tons per man shift last year. These figures have been calculated on a basis of all men working in the stoping area, yet even if they included every man engaged on underground work, production last year would still be 23 tons per man shift.

This impressive increase in production per man shift has been brought about chiefly by changes in the mining methods employed at Grängesberg. Although all improvements must be regarded as contributing to the overall effort, certain particularly important facets might be singled out for particular attention. These are the wholesale adoption of the Swedish method of drilling in preference to methods utilizing column-mounted equipment, the substitution of shovel loading for chute loading, and the use of the flexible flat bar drill steels made by the Sandvik Steel Works.

THE LM RANGE OF LOADERS

The loaders used in ore removal operations at the open stope edge are the Atlas Diesel LM 30 overhead shovel type of unit, which clear the broken rock into 2-ton end tipping trucks and can muck a path 7¼ ft. in width operating from a single rail track. These loaders are four-wheel driven through precision transmission gearing running in oil, and all delicate parts are housed in the swivelling frame. This swivelling frame provides an interesting feature, and embodies an automatic centring device incorporated in the swivelling mechanism which, together with a return movement arrangement, ensures that the bucket returns to centre after each scoop left or right unless otherwise directed by the operator.

The net digging capacity is high, and gross output can ordinarily be estimated at about 150 tons per eight-hour shift, although this figure may be exceeded through efficient organization. The loaders have a bucket capacity of approximately 3.95 cu. ft., and are powered by two com-



The LM 100 overhead loader in operation

pressed air vane motors, for bucket and swivelling motion and for track drivage.

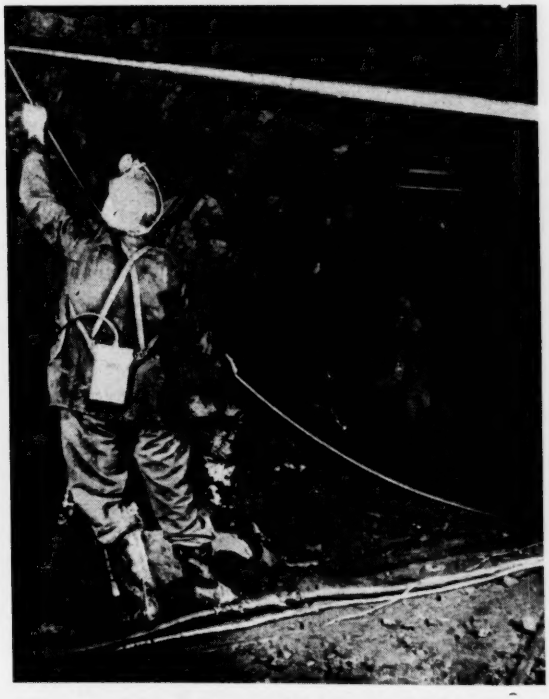
As a matter of fact, Atlas Diesel produces two other units of this range in addition to the LM 30, which in turn are designated the LM 35 and the LM 100, although a larger unit named the LM 200 is manufactured for special tasks. The loader illustrated is the LM 100, and is of particular interest to readers in the United Kingdom, as it is the type currently operated in South Wales by the N.C.B. At the same time, it is the largest of the three models in standard production.

The LM 100 embodies the same features as its smaller prototypes. Its bucket has a capacity of 7 cu. ft., and weight of the loader is 66½ cwt. It is supplied as standard equipment for track widths of 600, 650, 700, 750 and 900 mm., and the unit stands at 8 ft. 3 in. above the track. From these considerations it is therefore possible to calculate that the LM 100 should not be called upon to operate in a chamber of less than 8 ft. 6 in. to 8 ft. 9 in. in height. However, by modifying the bucket slightly it is possible to use the machine where ceiling height is only 8 ft. 3 in. As with the other models, the LM 100 is powered by reciprocating motors, one of which is in this case rated at 14 h.p. and provides the drive for bucket and swivelling movements, while the other compressed air motor is rated at 11 h.p. and provides motivation for the four track wheels.

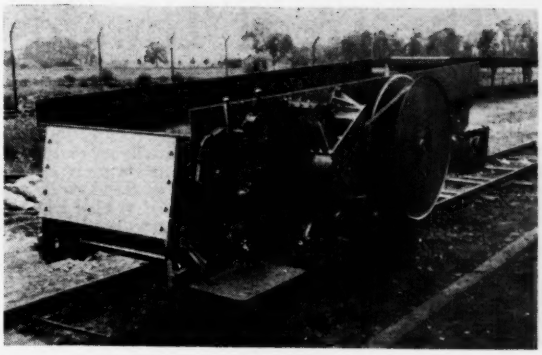
In Grängesberg mining operations loading in sub-level drifts is by the LM 30 model, while the LM 100 is used for main level development.

FLEXIBLE DRILL STEEL

As in many mines where sub-level caving is practised, in the sub-level caving operations at Grängesberg holes are normally drilled upwards, so that in many instances drilling takes place from confined spaces. The work involves the drilling of holes up to 19 to 20 ft. in length, and to meet the emergency of providing a steel to allow a long hole to be drilled from a confined working space, the Sandvik Steel Works has produced a flexible drill steel. The accompanying illustration gives a clear idea of the flexibility of the equipment.



Sandvik Coromant flexible flat bar drill steel enables long holes to be drilled from confined working spaces



The Atlas Diesel shuttle car

The steel comprises flexible tungsten-carbide tipped drill steels with flat bar 12 x 26 mm. drill rod rectangular in section. As in the case of normal tungsten-carbide tipped drill steels the steel has a central hole but is not provided with a collar. Performance is reported to be satisfactory in the caving area at Grängesberg.

These flat bar steels have been adopted as standard equipment in a number of mines where sub-level caving is practised. By their use large areas can first be drilled in both sub-level caving and shrinkage stoping operations, and then successively blasted as the ore is loaded and removed. The method of drilling and blasting using flexible drill steel lends itself to short-delay firing and in this operation ensures a more satisfactory fragmentation, less trimming and reduced time lag.

ELIMINATION OF HAND TRAMMING

One interesting item of equipment not seen at Grängesberg is the Atlas Diesel shuttle car with conveyor, which has been tested at the mine and is an important factor in the attempt to eliminate hand tramimng, one of the few mining operations not yet mechanized at Grängesberg.

Being driven by an air motor, the shuttle car eliminates manual transport from the working face to the chute, as the discharge into the chute is effected by the conveyor. Due to the satisfactory results obtained, it is planned to put a number of cars of this type into use at the mine.

The shuttle car has been designed by Atlas Diesel in association with the Grängesberg Company. The prime mover is an Atlas vane motor which gives the car a speed of 75 metre/min., 82 yd./min. The air hose which runs along the rails is reeled up on a hose roller, holding about 110 yd. of 1 in. hose and driven by a separate air motor. The conveyor runs at a speed of 11 yd./min. enabling discharge of a fully loaded car in about 45 sec.

The car has a loading capacity of 88 cu. ft., corresponding to about 6 tons of Grängesberg ore. Its overall length is 190 in. and its height 62 in., and by its use in conjunction with an Atlas loader type LM 30 one man is able to load and remove about 200 tons of ore in a shift.

Currently 120 tons of ore per shift are being hand trammed by three-man teams, but it is hoped that when these cars are in operation the figure will be raised to approximately 200 tons per shift.

As a result of the changes already adopted, the proportion of ore loaded by chute dropped to only 5.7 per cent in 1952 compared with 65.5 per cent in 1946, while the proportion loaded by machine expanded from 22.8 per cent in 1946 to no less than 91.7 per cent last year. To-day, only 2.6 per cent of the mucking at Grängesberg is completed by hand.

The Trend Towards Larger Earth Moving Equipment in the United States

The current trend towards increasing the capacity of earth moving equipment in the United States depends in considerable measure on the conditions of installation prevailing in a variety of mining operations. The following article, an abridgment of two papers presented by Mr. R. E. Meyer, chief engineer of the Harnischfeger Corporation, and Mr. R. M. Dickey, sales manager large machines, Bucyrus-Erie Company, at the Metal and Nonmetallic Mining Convention of the American Mining Congress in September, 1953, point out the demand for increased capacity in American excavation projects.

The capacity of earth moving equipment depends on installation conditions in a great variety of mining operations, some of which are limited to relatively small shovels and others capable of using very large shovels up to 40 cu. yd. capacity. It would thus appear that the market for any one particular size may be limited. Also, in the case of shovels, the size will be limited by the height of the banks, the width of benches and the steepness of pit slopes. The principal factors in determining bank height are thickness of the deposit, its physical characteristics, climatic conditions, method of fragmentation and operator and equipment safety. The width of benches is subject to less variation than bank height, requiring only enough width to provide for the shovel course and the haulage equipment. The width of the bench and the bank height determine the general pit slope, and good practice dictates that it is highly desirable to leave the slopes as steep as practicable in order to avoid excess overburden removal. In the case of applying larger shovels in existing mines, the present condition of banks and benches is more limiting in determining maximum sizes applicable.

ADVANTAGES OF INCREASED POWER

In spite of apparent limitations, some manufacturers of shovel and haulage equipment are recognizing the trend and have built, or are developing, larger units in answer to the trend and the success of these undertakings is due to several important engineering advances. In the case of shovel manufacture, the engineering development of simplified, lower cost, better performing electrical control to handle the larger power requirements of the increased size of machine is of major importance. The development and application of new mechanical and electro-mechanical power transferring devices has made possible the smooth application of large amounts of power in order to create faster digging and swinging cycles with larger, heavier machines. Also the increased use of alloy steel and welded construction has permitted the building of larger machines with lower ratio of weight to dipper size than heretofore. In haulage equipment, the successful development and application of torque converters and higher horsepower engines has made possible the design of large size units with actually lower operating costs than the conventionally powered smaller capacity units.

It may thus be said, *inter alia*, that the trend to larger shovels starts with the change toward larger capacity units in mining and earth moving requirements, and is further encouraged by the ability of manufacturers to produce successful shovel and haulage units in larger sizes. The fact that the trend can be satisfied with modern high capacity equipment should strengthen the trend and usher in a new mining era of large volume handling of low grade ores and overbuden at economical costs.

The economic considerations influencing the specifying of an excavator to be used with auxiliary transport, may be considerably different from those leading to the selection of a machine for work in which the unit accomplishes not only the excavation but transportation and disposal of the material. Major emphasis is given here to the mining type of shovel well known on the Mesabi iron range, and specifically to those now available with 6, 8, and 10 cu. yd. dippers. Four items influencing costs of operation are considered, which are : interest, taxes, and insurance on the all-in cost of installation of the machine, the operating labour, electric power, and repairs, maintenance, and supplies. Actual figures are used as bases, but results are expressed in percentages.

For comparison, interest, taxes, and insurance are set up on an estimated ten-year life for the machine. The average annual investment is then 55 per cent of the all-in cost of installation and the charges for interest, taxes, and insurance are annually 5.5 per cent of the capital charges. The monthly labour costs are based on operating crews consisting of an operator, oiler, and an electrician.

Properly constructed shovels of uniform design should operate at about equivalent cost per cubic yard of output for electric power and repairs, maintenance, and supplies, and again, regardless of precise figures, those selected should be equitable if applied equally to these three sizes of shovels. Output estimates indicate that the 8 cu. yd. shovel has an output potential of 30 per cent more than the 6 cu. yd. machine for equivalent work and the 10 cu. yd. shovel 60 per cent more than the 6 cu. yd. unit. The 10 cu. yd. machine would have 23 per cent greater output than the 8 cu. yd.

Outputs are based on an overall operating efficiency of 75 per cent which is about the best that can be expected in an open pit mining operation. When these estimated outputs are related to overall operating cost it is found that the 8 cu. yd. shovel operates at a cost per yard 93 per cent that of the 6, and the 10 at 90 per cent that of the 8. This indicates a lack of uniformity of unit operating costs as related to dipper sizes and output potential, due to the influence of interest, taxes and insurance.

CONSIDERATION OF SECONDARY ITEMS

Taking mine-run material, as at the majority of the proposed large taconite operations, it could be considered that four 10 cu. yd. shovels, or multiples of four units, are necessary to provide adequate outputs on the basis of a 75 per cent overall operating efficiency. This would mean that five 8 cu. yd. units or six 6 cu. yd. machines would give, for equivalent conditions, approximately the same output as four 10 cu. yd. excavators.

For a given output requirement all three sizes of shovels in the multiples used would operate at essentially the same cost per cubic yard within the limits of error of the estimates. Increased output of the larger shovels is not sufficient to compensate for the greater capital charges involved in this installation. The financial burden in the form of interest, taxes, and insurance for the 8 cu. yd. shovel is 35 per cent greater than for the 6 cu. yd. machine, and that for the 10 cu. yd. shovel 87 per cent greater. It is estimated that the all-in cost of five 8 cu. yd. shovels is 13 per cent greater than that of six 6 cu. yd. machines, and that of four 10 cu. yd. shovels about 9.5 per cent greater than that of five 8 cu. yd. machines. This emphasizes that items extraneous to the excavators proper must be given full weight in shovel selection.

Activities on Canadian Uranium Properties During 1952

Uranium mining activity was reported from several provinces of Canada during 1952. The following article, condensed from *Mineral Trade Notes* Vol. 37 No. 1, compiled by the U.S. Bureau of Mines, gives details of the more important operations which took place, and indicates that interest in uranium prospecting and production stretches to the extremities of the Dominion.

At the end of 1952 it was estimated that 645 radioactive properties or unstaked occurrences were known in Canada. Although some properties contain many individual occurrences, and the total number of such occurrences is estimated to be more than 3,000, most of the occurrences are believed to be unimportant. Activity spreads through the length of the Dominion, however, and all the major provinces have reported developments during last year.

The centre of activity for uranium in Northwest Territories is the Eldorado mine at Port Radium, Great Bear Lake. The crushing plant and concentrator were destroyed by fire in November, 1951, but were rebuilt despite heavy winter handicaps, and a leaching plant for treating tailings together with a plant for making acid were completed in the spring of last year. It is considered that the new mill and leaching plant will probably increase production by 75 per cent.

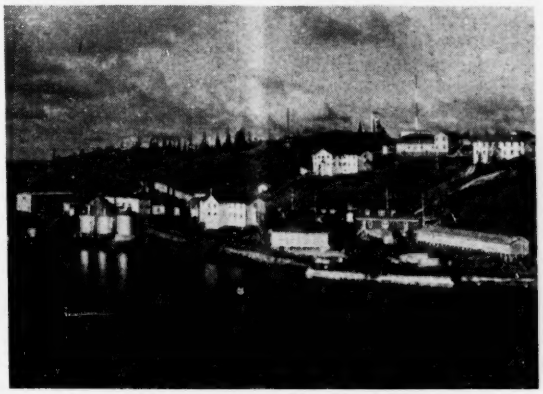


Photo: Courtesy National Film Board of Canada

The Eldorado Mine at Port Radium in Northwest Territories

Indore Gold Mines Ltd. explored underground at its Pitch 8 group at Hottah Lake, about 60 miles south of Great Bear Lake. The company began producing late in the year and intends to increase capacity to 50 tons a day. Ridley Mines Holding Co. began underground exploration of the C vein on its Rex property near the east arm of Great Slave Lake in August, 1952. Radior Uranium Mines Ltd. recently announced a pitchblende discovery on the Stark group in the same area and radioactivity surveys and trenching have begun. The Stark group is understood to be restaking the Rag group, where pitchblende was found a few years ago.

ACTIVITIES IN BRITISH COLUMBIA

The North Thompson region of British Columbia was the most active in the province during 1952. Surface work and diamond drilling were done at the Rexspar property about 70 miles north of Kamloops. The Rexspar group of 90 claims includes the former Smuggler property, where fluorite-celestite showings were drilled in 1942. Occurrences of uraninite and bastnaesite were found more recently, and the property is being drilled and bulk sampled in the hope of establishing a combined fluorite-uranium-rare earths operation.

Exploration also was reported to have been carried out on a radioactive discovery on the Verity group, 23 miles north of Blue River. Some uranium was found at the Red Rose and Rocher DeBoule mines in the Hazleton area, and although the main efforts have been the production of tungsten at the former and copper at the latter, some attention has been paid to the possibility of recovering uranium.

In Saskatchewan, the Goldfields (Beaverlodge) region, immediately north of Lake Athabasca, was the most active uranium area during 1952. The chief operation was that of the Government-owned Eldorado Mining and Refining Ltd., where about 800 men were employed underground and in surface construction preparing for production in 1953. Underground exploration was also carried on at six privately owned properties, and diamond drilling was done at 21 privately owned properties. New pitchblende discoveries were made on at least 16 other private properties staked during the year, chiefly in the Milliken Lake area of the region.

The concession system in the district was terminated in 1952. In 1949 the Saskatchewan Government withdrew the unstaked part of the Goldfields region from staking and issued concessions to expire March 31, 1952, after which the holders of concessions were to be allowed to retain part of the ground as claims, and the rest was to be opened for general staking. Some of the concessions were abandoned before the end of March, 1952, and on August 4 the ground not retained by the concession holders was opened for general staking. About 250 persons staked approximately 1,000 claims, but only a few discoveries have been reported on some of the recently staked claims.

PROMISING DEPOSITS IN SASKATCHEWAN

The Eldorado Co. has about 200 claims in the Goldfields region, most of which are in a large block extending about 9 miles along the St. Louis fault. Prospecting and drilling in previous years resulted in a number of pitchblende discoveries. Three of the main groups of showings were explored underground; the Martin Lake showings were explored from an adit in 1948 and 1949, underground work on the Ace showings had been carried on continuously since late 1949, and the Eagle showings were explored from a shaft in 1950 and 1951. Work on the Ace resulted in the discovery of two main ore bodies, the west one being the larger. The company announced in 1951 that it was possible to forecast an operation with a minimum of 500 tons a day, with good prospects of a larger tonnage. Plans were then made to deepen the Ace shaft to permit exploration below the second level, to sink an operating shaft, and to build a treatment plant.

Two other promising mineralized zones not far from the Ace have been outlined by diamond drilling from the surface; the Fay zone, near the St. Louis fault, and the Ura, about 1,000 ft. south of the fault. Sinking of a five-compartment shaft capable of handling 2,000 tons a day was begun in 1951 and nearly completed by the end of 1952. A large treatment plant is being built near the Fay shaft, which will use a basic (carbonate) leaching process. The first unit will have a capacity of 500 tons of ore a day, and the crushing plant will have a capacity of 2,000 tons a day to allow for possible future increases in treatment capacity. Production began in April 1953.

Private companies have explored underground at the Nicholson property, Eagle-Ace property of Nesbitt-LaBine Uranium Mines Ltd., and on the Leonard showings of Rix Athabasca Uranium Mines Ltd., although only the Eagle-Ace was explored in 1952. Rix Athabasca Uranium Mines sank a shaft to permit exploration of its Smitty showing on two levels. This showing is about 1 mile north of the Leonard adit. Nesbitt-LaBine Uranium Mines began an adit near Melville Lake on its A.B.C. claims, which include the Nesbitt showing, and the adit was planned to explore beneath this showing at a depth of about 225 ft. Late last year pitchblende was reported to have been intersected about 750 ft. from the portal.

Consolidated Nicholson Mines Ltd. announced that work done before operations were suspended indicated that available ore in the No. 4 shaft area amounted to 12,209 tons, with an average uranium oxide content of 0.34 per cent (uncut) or 0.24 per cent (cut).

Drilling continued on 10 of the 23 deposits privately owned previously diamond drilled, and was begun on 11 additional properties in 1952, while discoveries were reported on 14 claims groups in the Milliken Lake section of the Goldfields region. Late in the year diamond drilling was begun on the Ed-Bon group of Gunnar Gold Mines Ltd.

Several deposits of uraninite-bearing pegmatite and migmatite have attracted attention in the Charlebois Lake section of the Stony-Rapids-Porcupine River region. Diamond drilling of some of the deposits was continued by Charlebois Lake Uranium Mines Ltd. and Dee Explorations Ltd. The former company stated that work on its main properties, the Row and Mike groups, indicated 3,445 tons per vertical foot, averaging 0.076 per cent U_3O_8 equivalent, for an average width of 32.6 ft.

INTERESTING DISCOVERY IN THE EAST

There was much less activity in Ontario in 1952 than during the previous few years. Staking was reported north of Sioux Lookout, but only assessment work appears to have been done in the Sault Ste. Marie region where about 5,000 claims were staked in recent years following the discovery of pitchblende at the Camray property in 1948. Several prospectors and companies were active in the Grenville sub-province of the Canadian Shield.

Peach Uranium Mines Ltd. stated that the company had made a discovery in Northern Ontario of a uranium deposit, which is probably the most important to date in Eastern Canada. The discovery was made near the village of Algoma, or Algoma Mills, in the south-east part of Long Township, about midway between Sudbury and Sault Ste. Marie and near the north shore of Lake Huron. On the basis of assays of a number of drill holes, an indicated or inferred tonnage of 1,300,000 tons of ore averaging about 0.12 per cent uranium oxide has been estimated. The deposit is the most accessible of known or indicated uranium deposits in Canada. Thirty-five holes 200 to 300 ft. apart have been drilled and assays made on cores from 32 holes. The 32 drill holes explored a roughly rectangular area about 400 ft. wide and 4,460 ft. long, of which 3,520 ft. are indicated ore.

The deposit is said to consist of a mineralized replacement in a series of pre-Cambrian sediments. The radioactive material is from 5 to 15 ft. thick, and nearly horizontal with a dip of only about 15 degrees.

The Grenville sub-province continues in Quebec north of the Ottawa and St. Lawrence Rivers, and like its counterpart in Ontario contains many occurrences of radioactive pegmatite. One of these, the old Maisoneuve mine, 110 miles north of Montreal, was reported to have been explored by bulldozing and trenching. This property is now held by the South State Uranium Mines Ltd.

TECHNICAL BRIEFS

Advantages of Cold Welding Aluminium

Encouraging laboratory tests and successful practical applications of the cold welding process on aluminium indicate that it produces a strong and true weld and is quicker and more economical than hot welding. Under proper controlled conditions, the simple application of pressure through a suitably shaped die is all that is needed to effect a true weld. Promising laboratory experiments have been conducted by Bohn Aluminium and Brass Corp. of America, according to a report in *Modern Metals*.

Two operations are required to make a cold welded joint; preparing and cleaning the parts, and applying the necessary pressure to produce the weld. The actual welding is effected when metal is flowing away from the punch, exposing surfaces, free of oxide or other material, which readily unite. Additional pressure, after the metal has stopped flowing, helps to ensure a good bond.

A test of four samples of cold welded 2S-O, 2S-H14 and 2S-H34 aluminium alloys showed that tension at break ranged from 150 to 155 lb. for the 2S-O, from 180 to 185 lb. for the 2S-H14, and from 190 to 200 lb. for the 2S-H34. All welds were made at 60,000 lb. load, with the same pair of punches making simultaneous impressions in both top and bottom. They had slightly rounded edges and an area of 0.02 sq. in. It appeared that the strongest joint was produced in the strongest alloy, but not in proportion to the differences in parent metal strength. Because of the inherent reduction of the area immediately surrounding the actual weld, failure will take place at the perimeter—indicating that the tensile values obtained were a minimum and the actual weld values much higher.

The Age Determination of Igneous Rocks

According to Larsen and co-workers the age of any fresh igneous rock may be determined by an examination of the accessory minerals (Bull. Geol. Soc. Am. 63, 1045, 1952). Those especially suitable are allanite, monazite, and zircon in which minerals the lead present is thought to be chiefly radiogenic as opposed to primary lead which concentrates in the potassium minerals.

The method adopted is to separate off the accessory minerals, measure the radioactivity with an alpha ray counter, and the total lead concentration by the spectrograph. The age of the rock in millions of years, $T = c\ Pb/\alpha$ where c is a constant varying with the proportion of uranium and thorium, average values of which are given for a number of minerals; Pb is the amount of radiogenic lead in p.p.m. and α is the radioactivity measured in α particles per mgm. per hr.

Tests carried out show good agreement with other methods for Paleozoic and Precambrian rocks but estimates of the ages of younger rocks seem to come out somewhat high.

Uses for Blast-Furnace Slag

For many years, blast-furnace slag was a waste product. Now, however, it has become useful in several ways. Air-cooled slag, which is formed when molten slag solidifies under atmospheric conditions, is sold both as processed and as unprocessed slag, according to a report in *Steel Facts*.

The first variety is used in concrete for buildings of all types and is also used in bituminous highway and airport construction, and for railroad ballast. It is the principal source of raw material in the manufacture of mineral wool, which is used for both thermal and accoustical insulation; and for roofing granules, which reduce fire hazard and protect the bitumen base from the effects of the sun. The unprocessed variety of air-cooled slag is used chiefly as railroad ballast, as road material, and as land fill.

Foamed or expanded slag is formed by treatment with limited quantities of water. The product is used chiefly in the production of concrete blocks as an aggregate in light-weight concrete. In the processing of blast-furnace slag, 368,500 net tons of iron which would otherwise have been wasted were recovered, according to a report by the United States Bureau of Mines.

METALS, MINERALS AND ALLOYS

The markets for the major industrial metals continue rather quiet, while news interest turns increasingly towards developments in the production and application of the "new" metals. While volumetrically these, with the exception of aluminium, do not yet impart any serious threat of competition, the shift of interest in their direction should become more significant as time goes on.

It has been announced in Washington that allocations of steel, aluminium, and copper for direct military and atomic energy programme needs will be cut by some 20 per cent in the first quarter of next year. This is estimated to represent some 1,466,840 s.tons of steel against 1,837,803 s.tons in the current quarter; 83,658 s.tons of copper and copper-based alloys against 108,750 s.tons; and 83,850 s.tons of aluminium against 101,800 s.tons in the current quarter.

COPPER.—The London market has been steady this week with prices inclined to rise. Government sales have been moderate. In the States demand continues moderate with about 80,000 tons disposed of in the first four weeks of October. Imports are on a declining scale due to the smaller receipts from Chile; August arrivals were 50,782 s.tons against 70,296 in July, and 76,622 in June. Over the year to the end of August however, imports showed an increase of over 40 per cent at 495,141 s.tons. There is no news of the termination of the strike at the Anaconda Mines in Chile.

The position with regard to the great Chilean stock of unsold copper remains obscure. There have been no official, and therefore trustworthy, announcements forthcoming. However, Press reports, both in the United States and in Santiago, are filling up the vacuum with statements which, to quote a famous dictum, are "important if true." Thus it is reported from New York that negotiations between the respective Governments have progressed so far that a tentative agreement has been reached and is now being submitted to the principals for approval. Santiago, however, has gone one better and Press reports there quote the ex Minister of Mines, Senor Almoyda, to the effect that Russia has offered to buy 250,000 tonnes of copper annually over a three year period, paying for it in dollars at Chilean ports at a price 4 or 5 c. above the world market level. In the immediate present they would buy 100,000 tonnes at 34 c. per lb. However, these two reports rather contradict each other, though it may be that the Russian offer, assuming it to have been made, dates back some time. Russia presumably would like to get more copper, but on the other hand this report may have had its origin in a desire to influence the negotiations with the United States Government in the direction desired by the Chileans. On the other hand, it may be no more than spoiling tactics on the part of the Soviets. Their reported willingness to pay the price originally asked by Chile over so long a period, when market opinion generally is that we shall see lower prices for copper as time goes on, is a little suspicious. An economic offensive against the free world supplies and markets on the part of the Kremlin is always a possibility.

It is reported from Japan that that Government is expected to permit imports of electro at an initial rate of 1,000 tons per month, to enable makers of wire and brass to cut their export prices substantially. The domestic full scale output of copper which in September amounted to 8,709 tonnes is stated to have fallen short of requirements. The price suggested is around Yen 250,000, compared with existing refinery price of Yen 320,000.

TIN.—Tin has been on balance a steady market in London with some reduction in the backwardation. The U.S. price on Wednesday was 81 c. per lb.

Further output figures for September indicate that world production is maintaining its volume. The output for Malaya is reported as 4,669 tons compared with 4,506 in August, giving a total for the nine months of 41,411 tons as against 42,294 a year ago; Malayan production has been extraordinarily regular month by month this year. Total Malayan stocks of tin in all forms rose in September to 5,565 tons (5,199 end August). Thus far, therefore, the big decline in price has not, as had been so widely forecast, affected Malayan output, and seems unlikely to do so as long at any rate as the local price does not fall below S$300 per picul. It is understood that negotiations between the R.F.C. and the Indonesian representatives in Washington regarding the price to be paid for tin next year, the final period of this contract, have now started. The Bolivian Corporación Minera has notified the Patiño Hochschild and Aramayo companies of its readiness to start talks on the value of their properties.

A Singapore report is to the effect that prospecting off Puket in Siam has revealed a rich tin deposit some six miles off the western coast. The area prospected is said to be 40 by 20 miles in extent and that operations extend to some 150 ft. deep.

Imports of tin metal in the U.S. given by the Department of Commerce in August are 6,992 tons and of concentrates 1,124 tons. For the first eight months of the year metal imports were slightly down at 51,941 tons against 52,738 tons in the same period of last year, but concentrates were considerably up, principally owing to increased Bolivian shipments, at 24,710 tons of contained tin against 15,032.

The United States Vice-President, Mr. Nixon, who is making a fact-finding tour in the Far East, arrived in Kuala Lumpur at the beginning of the week. Pressed by tin and rubber producers for some statement as to his Government's intentions as regard purchases, he said that the problem for both products was not the immediate price but stability over a period of time. High rubber and tin prices would not alone solve the Malayan problem. He concluded by stating that he had no authority to indicate the policy of the U.S., his job being to learn the facts and report them to the President.

LEAD AND ZINC.—The week's news on these two metals is well covered by our Metal Exchange correspondent's notes below. In the U.S. the immediate outlook is said to be for price steadiness based partly on the strength of the London market.

ALUMINIUM.—With U.S. production of aluminium showing an increase month by month, the fourth quarter output is estimated at approximately 325,000 s.tons, of which some 115,000 s.tons will be new production due to the expansion programme. Imports are rising more rapidly, and in July were 71 per cent up on the June figures. Mr. R. S. Reynolds, Jnr., recently expressed himself confident that the industry would be able to sell its rapidly rising production, in fact, managements were thinking where additional plants could be best located. He mentioned the economy of labour in factories and warehouses due to the metal's lightness, its rapid gains in the constructional industry, and the increased use in automobile building where the latest type of car averaged 55 lb. per unit compared with 10 lb. in earlier types, the gain had been most marked for radiators.

COLUMBIUM/TANTALUM.—The Business Services and Defence Administration of the U.S. is removing restrictions on the use of columbium and tantalum of which the chief supplier is said to hold concentrates adequate for at least a year's requirements. Imports of columbite concentrates into the U.S. last year were 939 s.tons, of which Nigeria supplied 725 s.tons, and the Belgian Congo 177 s.tons. Efforts are now being made to produce columbium as well as titanium from the black sand bauxitic deposits in Arkansas as well as in Bear Valley, Idaho, where it occurs with uranium and other rare earth minerals.

U.S. import of tantalite concentrates last year totalled 164 s.tons against 119 s.tons in 1951. Chief suppliers were the Congo 118 s.tons, Brazil 25 s.tons, and Portugal 17 s.tons.

MOLYBDENITE.—Climax Molybdenite, which produces the bulk of U.S. production—the balance being from Kennecott properties in Utah, and Chile mines—recently entertained a number of visitors to view the extensions now proceeding at its Colorado mine at a height of over 11,000 ft. Production is being raised from about 22,000 tons of ore daily to a capacity of about 28,000 tons. To meet the estimated cost of expansion—$34,000,000—the U.S. Government has contracted to purchase 50,000,000 lb. of contained molybdenum up to the end of 1962.

TITANIUM.—Production of titanium metal is likely to show big advances in the near future. Rem-Cru (Remington-Crucible Steel), the leading producer of finished titanium products, has

announced that it will increase its output in the first half of next year by 300 per cent. The Du Pont de Nemours Company has announced that it will discontinue the manufacture and sale of lithophone pigments next February, as lithophone has been largely superseded by TiO_2 for most paints and other uses.

TUNGSTEN.—The feature this week is a further lowering of the Ministry's selling price for wolfram and scheelite which is now 270s. and 255s. respectively. The market remains very quiet due in part to panic offers down to 200s. from the Far East, but when this business has been dealt with some improvement may possibly take place. While the world buying price is called 265s. to 255s. per unit sellers may be forced to accept substantially lower prices than hitherto.

Iron and Steel

Against a favourable background of full-scale activity at the producing plants, Sir John Morison's Iron and Steel Holding and Realization Agency has begun this week the disposal of the nationalized steel properties. There seems to be no doubt in the City regarding the success of the issue of United Steel shares and a substantial profit will accrue to the State.

In a less spectacular fashion, the new Iron and Steel Board is also swinging into action. Amongst the powers vested in this authority is that of " vetting " all future schemes of modernization or development, and iron and steel producers have this week been served with notices that any proposals of this description estimated to cost more than £100,000 must first be submitted for the Board's consent. The £100,000 limit it is added will be reviewed from time to time " in the light of experience."

Yet another change in the administrative side, announced this week, is the retirement of the Earl of Dudley from the Board of British Iron and Steel Corporation of which he has been chairman since its inception in 1935 and the appointment in his stead of Sir Charles Bruce-Gardner who has had wide experience as chairman of John Lysaght Ltd. and director also of the Steel Company of Wales, and Guest Keen and Nettlefolds Ltd.

Market reports indicate healthy activity in most but not all branches of the iron and steel industry. The re-rolling mills are still working short time, and the improvement in the light castings trade is so slight as to be almost imperceptible. Re-rollers and sheet makers are now well stocked with billets, short bars and slabs and as ampler supplies of home produced steel semis are available, drastic cuts have been made in the volume of imports from the Schuman States. The September import figures were the lowest recorded this year.

Export trade returns are on a better scale. Shipments of black and galvanized sheets, hoop and strip have taken a sharp upward turn and further substantial tonnages for the Argentine have been booked. Complaints about the shortage of steel plates have not been wholly silenced but outputs from the mills have been speeded up; further big tonnages have arrived from Austria and the position is distinctly easier.

The London Metal Market

(From Our Metal Exchange Correspondent)

There is nothing to report in respect of the tin market, and apart from routine buying it is doubtful whether there will be any major price movements until the result of the next conference is known. The Eastern price on Thursday morning was equivalent to £632½ per ton c.i.f. Europe.

The lead market has experienced a very heavy demand for October settlement at a time when normally only technical adjusting operations are to be expected, and this resulted in a very firm price for the current month and a backwardation of about £6 per ton. As usual the backwardation is likely to diminish when the market starts dealings in November as the current month, and it is to be hoped that such wide movements in the backwardation towards the end of each month will not become a regular feature of the market. Unsold supplies are not plentiful and any sudden demand for prompt and nearby metal can cause unexpected and sharp price movements.

The zinc market has been featureless except for the backwardation, which is now likely to continue for a period as supplies of the metal have been curtailed subsequent to the very low prices which existed in April, which caused some producers to stockpile their concentrates and others to reduce or close down operations. There is still a considerable demand for high-grade zinc, and some smelters are endeavouring to step up their output of this grade to the detriment of g.o.b. which forms the basis of the London Metal Exchange contract.

The Government Broker has not been called upon to supply any considerable tonnage of ordinary cash copper, although the demand for special shapes has continued: demand for future delivery remains satisfactory. There are rumours that the U.S./Chilean negotiations are reaching a conclusion, which are to be believed, but others, which say that the Russians are prepared to buy large quantities of Chilean copper at well above the world price, are to be treated with reserve.

Closing prices and turnovers for the week are given in the following table:

	October 22		October 29	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£617½	£620	£630	£632½
Three months	£597½	£599	£612½	£614
Settlement	£617½		£632½	
Week's turnover	265 tons		380 tons	
Lead				
Current month	£92½	£93	£97½	£97½
Three months	£88¾	£89	£90¾	£91
Week's turnover	4,000 tons		6,175 tons	
Zinc				
Current month	£75½	£75¾	£75¾	£76
Three months	£71½	£71¾	£72½	£72¾
Week's turnover	4,200 tons		4,700 tons	
Copper				
Cash	£232½	£237½	£237½	£242½
Three months	£224	£224¾	£223½	£224
Settlement	£237½		£242½	
Week's turnover	3,225 tons		4,750 tons	

OCTOBER 29 PRICES

COPPER, TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered, 10 cwt. and over .. .. .. £225 per ton
Crude (70%) .. .. £210 per ton
Ore (60% basis) .. .. .. 22s./24s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) .. .. £483 per ton

OTHER METALS

Aluminium, 99·5% £150 per ton
Bismuth (min. 4 cwt. lots) 16s. lb.
Cadmium (Empire), 13s. 10d./14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96%-98%) £280/£295
Osmiridium, £40 oz. nom.
Osmium, £65/£70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £61 15s. ex-warehouse
Selenium, 30s. 6d. nom. per lb.
Silver 74d. f.oz. spot and f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 30% 5s. lb. c.i.f.
20% 3s. 3d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £14 8s. 0d. per ton c.i.f.
,, ,, (concentrates) £14 8s. 0d. per ton c.i.f.
,, ,, Refractory £14 0s. 0d. per ton c.i.f.
Baluchistan Metallurgical .. £15 19s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26 - £27 d/d
Magnesite, Raw .. .. .. £10 - £11 d/d
Molybdenite (85% basis) .. 103s. 10½d. per unit c.i.f.
Wolfram (65%) .. .. .. World buying 255s./265s.
,, ,, ... 270s. nom. U.K. Selling
Scheelite .. .. World buying 240s./250s.
,, ... 255s. nom. U.K. Selling
Tungsten Metal Powder .. .. 21s. 6d. nom. per lb. (home)
(98% Min. W.)
Ferro-tungsten .. .. .. 18s. 6d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £35 13s. 9d. d/d per ton
Ferro-manganese, home .. .. £49 15s. 0d. per ton
Manganese Ore Indian c.i.f. Europe (46% - 48%) .. .. .. 7s. 11d. - 8s. 7d. per unit
Brass Wire .. .. 2s. 5½d. per lb. basis
Brass Tubes, solid drawn .. 1s. 10d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Markets during the past week have been moderately active. Gilt-edged staged an initial rise in value following the favourable terms announced for the exchange of many government issues into the new United Steel shares. Later, however, the stagnation forecast last week began to make itself apparent.

Kaffirs lost much of last week's gloss. Business declined, end of account influences, and Dr. Malan's Bloemfontein speech affected the market. One sound move has been the repeal by South Africa of the law requiring the processing of gold for sale at free premium prices. This will mean some small extra profit for the mines. Unfortunately, the free price of gold is now below $36 per oz. and shows little immediate prospect of recovery.

Quarterly results from the Consolidated Goldfields and Central Mining Groups failed to arouse much enthusiasm. West Driefontein recorded a considerably enhanced profit. This worked out at £745,220 against £684,356 before free market sales. Development payability was still maintained at 100 per cent, although reef values were slightly lower. A much larger slice of revenue was taken by the South African government from this property. Doornfontein showed payability of 62 per cent against 76 per cent for the June quarter. Production will begin next month on a basis of 40,000 tons per month. This will gradually be stepped up to 100,000 tons per month.

Blyvoor's payability fell to 92 per cent against 95 per cent. Average reef values were, however, slightly higher. This mine's uranium profits for the quarter were sharply increased at £94,912 against £21,710. These results were achieved without any diminution of gold mining profits.

O.F.S. issues followed the general trend of Rand shares, despite the better results from Virginia and Harmony. The latter alone in this market recorded any improvement. Renewed underground reef development at Virginia returned 67 per cent payability for average values of 299 in. dwt. Harmony reported 97 per cent payability for reef values of 680 in. dwt. Underground development from the No. 3 shaft on this property now at a depth of 5,173 ft. should begin next month. Merriespruit fell sharply after the report that 57 per cent of reef developed proved payable giving values of 273 in. dwt. This compared with 71 per cent at 334 in. dwt. for the previous quarter.

West Africans returned to the doldrums. West Australians, however, were generally firmer following more optimistic views over the prospects and production outlook for mines operating on the golden mile.

In the miscellaneous section St. John del Rey again fell away sharply. The mine has temporarily ceased production owing to a strike of underground labour. Readers will recall that this follows the passing of the interim dividend due to local currency difficulties.

Diamond shares were mostly easier where changed, but Platinums improved on optimism over the coming Rustenberg report. Despite this shares in the group closed below the best.

Coppers were uneasy and generally turned lower. The Messina dividend of 400 per cent for the year was well received and up to the best expectations. Rhodesia Katanga fell on the absence of any fresh borehole results. Esperanza rose but encountered profit-taking at around 6s. 6d.

Eastern tin shares were irregular in very quiet trading conditions. Renong finished lower at 8s. 3d. after the reduced dividend and lower net profits.

Nigerians hardened after the Amalgamated Tin meeting. The existing Naraguta Board were confirmed in their policy by the shareholders' poll.

Associated Manganese improved on local demand. Central Provinces Manganese, however, again fell away. Recent fiscal measures by the Indian Government have upset the whole market in Indian bonds and shares.

Canadians where changed were mostly better. Hollinger rose $1 on the encouraging reports concerning the richness and extent of the Labrador-Ungava iron deposits.

	Price Oct. 28	+ or — on week
FINANCE		
African & European	2	
Anglo American Corpn.	5 9/16	—⅛
Anglo-French	17/6	+3d
Anglo Transvaal Consol.	20/-	
Central Mining (£1 shrs.)	27/3	—9d
Consolidated Goldfields	48/9	—9d
Consol. Mines Selection	23/9	—7½d
East Rand Consols	2/10½	—1½d
General Mining	3½	—⅛
H.E. Prop	36/3	—1/3
Henderson's Transvaal	7/-	
Johnnies	50/3	—1/7½
Rand Mines	3⅜	—⅛
Rand Selection	30/7½	—7½d
Strathmore Consol.	30/7½	—7½d
Union Corp. (2/6 units)	26/-	—1/-
Vereeniging Estates	3 11/16	+1/32
Writs	32/6	—7½d
West Wits	40/7½	—1/10½
RAND GOLD		
Blyvoors	39/-	—9d
Brakpan	10/-	—3d
City Deep	15/-	—7½d
Consol. Main Reef	17/6	—7½d
Crown	33/1½	—7½d
Daggas	3 11/16	—1/32
Doornfontein	22 -	—1/-
Durban Deep	35/-	+7½d
E. Daggas	13/7½	+1½d
E. Geduld .. (4/- units)	30/-	
E. Rand Props	2½	—⅛
Geduld	4	
Govt. Areas	11/9	—9d
Grootvlei	22/-	
Libanon	8/10½	—7½d
Luipaards Vlei	22/6	—1/-
Marievale	17/-	—9d
Modderfontein East	17/6	
New Kleinfontein	18/1½	
New Pioneer	16/9	—1/-
Randfontein	47/-	—3d
Robinson Deep	10/9	—6d
Rose Deep	12/6	
Simmer & Jack	4/6	—3d
S.A. Lands	19/9	—3d
Springs	4/1½	—3d
Stilfontein	25/9	—6d
Sub Nigel	2	—⅛
Van Dyk	4/-	—6d
Venterspost	13/3	+3d
Vlakfontein	13/-	—3d
Vogelstruisbult	32/-	—6d
West Driefontein	6 9/16	—⅛
W. Rand Consolidated	2⅜	—1/16
Western Reefs	2 1/32	—1/32
O.F.S.		
Freddies	8/7½	—7½d
Freddies N.	8/7½	—4½d
Freddies S.	7/7½	—4½d
F. S. Geduld	2½	—⅛
Geoffries	13/6	—9d
Harmony	23/-XR	+1/-
Loraine	7/-	—3d
Lydenburg Estates	11/9	—6d
Merriespruit	7/9	—7½d
Middle Wits	14/-	—1/3
Ofsits	33/9	—1/3
President Brand	27/9	—4½d
President Steyn	21/4½	—4½d
St. Helena	13/3	—6d
Virginia Ord.	11/6	—7½d
Welkom	16/-	—9d
Western Holdings	3⅜	—⅛
WEST AFRICAN GOLD		
Amalgamated Banket	1/7½	—1½d
Ariston	5/10½	—1½d
Ashanti	20/1½ XD	—7½d
Bibiani	5/-XD	—1½d
Bremang	2/1½	
G.C. Main Reef	3/4½	—1½d
G.C. Selection Trust	6/-	—1½d
Konongo	2/3	—1½d
Lyndhurst Deep	1/-	
Marlu	1/3	—1½d
Taquah & Abosso	3/-	
AUSTRALIAN GOLD		
Boulder Perseverance	2/6	
Gold Mines of Kalgoorlie	13/-	
Great Boulder Prop.	9/3XD	—6d
Lake View and Star	15/3	+6d
Mount Morgan	17/9	+6d
North Kalgurli	6/-	—6d
Sons of Gwalia	5/6	—3d
South Kalgurli	6/9	
Western Mining	11/10½	+1½d
MISCELLANEOUS GOLD		
Cam and Motor	9/6	
Champion Reef	4/9	
Falcon Mines	7/-	
Globe & Phoenix	23/-	
G.F. Rhodesian	5/-	—6d
London & Rhodesian	4/10½	—1½d
Motapa	1/9	
Mysore	3/6	+1½d
Nundydroog	5/7½	—1½d
Ooregum	4/1½	—1½d
Oroville	11/6	
MISCELLANEOUS GOLD (contd.)		
St. John d'El Rey	23/-	—1/3
Zams	30/6	
DIAMONDS & PLATINUM		
Anglo American Inv.	4	+1/32
Casts	22/-	
Cons. Diam. of S.W.A.	4½	
De Beers Defd. Bearer	63/9	—3d
De Beers Pfd. Bearer	15⅝	—⅜
Pots Platinum	8/9	+6d
Watervaal	14/-	+1/-
COPPER		
Chartered	53/-	—9d
Esperanza	6/7½	+3d
Indian Copper	3/10½	
Messina	3 13/16	—1/32
Nchanga	6 9/16	
Rhod. Anglo-American	49/6	
Rhod. Katanga	13/9	—1/-
Rhodesian Selection	14/6XD	—1/1½
Rhokana	18½	—⅛
Rio Tinto	20½	
Roan Antelope	14/1½ XD	—1/3
Selection Trust	33/9	+6d
Tanks	57/6	
Tharsis Sulphur Br.	42/6	
TIN (Eastern)		
Ayer Hitam	22/6	—7½d
Bangrin	8/-	
Gopeng	7/7½	—1½d
Hongkong	5/6	—3d
Ipoh	12/6XD	—1/10½
Kamunting	7/9	—1/-
Kepong Dredging	4/-	—4½d
Kinta Tin Mines	10/-	
Malayan Dredging	25/6	+6d
Pahang	13/3	+6d
Pengkalen	8/-	
Petaling	7/9	—3d
Rambutan	10/3	
Siamese Tin	8/3	
Southern Kinta	13/-	—3d
S. Malayan	24/-	
S. Tronoh	7/9	
Sungei Kinta	10/-	
Tekka Taiping	4/-	—1½d
Tronoh	22/-	
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	10/3	+3d
Beralt Tin	23/9	+3d
Bisichi	4/-	—1½d
British Tin Inv.	12/4½	+1½d
Ex-Lands Nigeria	3/6	
TIN (Nigerian and Miscellaneous) contd.		
Geevor Tin	9/9	
Gold & Base Metal	3/3	—1½d
Jantar Nigeria	8/4½	—1½d
Jos Tin Area	11/4½	
Kaduna Prospectors	2/4½	
Kaduna Syndicate	2/4½	
London Tin	5/6	+1½d
United Tin	2/7½	—1½d
SILVER, LEAD, ZINC		
Broken Hill South	2 5/16 XD	—1/32
Burma Mines	1/4½	
Consol. Zinc	24/3	+9d
Lake George	9/3	—3d
Mount Isa	31/-	—6d
New Broken Hill	23/-	+6d
North Broken Hill	2½	—1/32
Rhodesian Broken Hill	10/7½	
San Francisco Mines	17/3	—3d
Uruwira	2/6	
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	43/-	
Associated Manganese	50/6	+1/3
Cape Asbestos	21/7½	+1½d
C.P. Manganese	50/-	—1/3
Consol. Murchison	21/-	—6d
Mashaba	4½d	
Natal Navigation	3½	—1/16
Rhod. Monteleo	2/6	
Turner & Newall	59/-	
Wankie	12/-	
Witbank Colliery	3 1/32	
CANADIAN MINES		
Dome	$29½	+1
Hollinger	$24¾	+1
Hudson Bay Mining	$75	—½
International Nickel	$72⅛	—⅜
Mining Corpn. of Canada	£3¾	
Noranda	$121½	
Quemont	£6	+⅛
Yukon	3/9	
OIL		
Anglo-Iranian	7 3/32	—1/32
Apex	41/3	—7½d
Attock	36/3	+7½d
Burmah	55/7½	—1/3
Canadian Eagle	29/3	—4½d
Mexican Eagle	22/10½	—3d
Shell (bearer)	4 5/16	
Trinidad Leasehold	28/6	—1/-
T.P.D.	23/6	+1/-
Ultramar	26/7½	

COMPANY NEWS AND VIEWS

Union Drops "Processing" Obligation for Free Gold Market

At the beginning of this week it was announced that the South African government had abandoned the stipulation that sales of South African gold on the free market must be in the form of processed metal with a maximum of 11/12 fineness, or with an *affidavit* stating that the gold will be processed in that form. In effect, the dropping of this self-imposed restriction means that the 40 per cent of the Union's total gold production which has hitherto been earmarked for sale in the free market, need no longer be in the form of wires, strips, or plate but may now be marketed in bar form.

The abandonment of this restriction comes as a surprise only in the matter of its timing for nearly all the other Commonwealth gold producers have long ago been free of this obligation. The reason for this decision is fairly obvious. For some months, the free market price has not been above $36 per f.oz. from which premium there are deducted charges for shipping, insurance, etc., which account for about 35 c. per oz., while the processing charges took another 30 c. per oz., leaving the gold producer only about 30 c. on the basis of a gross premium of 95 c. per oz., over the official price. Hence, by eliminating the processing charges the gold producer would receive approximately double his present premium which has been gradually running off with the result that its importance as a factor to offset rising costs was becoming insignificant.

It may be recalled that the decision to market gold in processed form on the free market was originally imposed as a conciliatory gesture to the International Monetary Fund but which was abandoned by other producers as the gap between the premium price and the official price narrowed.

The South African government's decision quite naturally raised the question as to whether it might, in fact, follow this step to its logical conclusion and allow the South African producers to market the whole of their gold production on the free market rather than limiting their sales to 40 per cent of their output. This course has been taken by other Commonwealth gold producers so that as a matter of equity at any rate, there would be every justification for South Africa to do the same. However, the Union's production being so much larger than that of the other Commonwealth countries, it would be running the real risk of flooding the free market to the point where the premium over the official price might well run off altogether.

In connection with the foregoing, the Hongkong government announced that the trans-shipment of gold consigned to any destination through Hongkong on a through bill-of-lading would be allowed and that the necessary import and export licences would be freely issued to approved applicants. The announcement also stated that gold, in the form of bars, coin and processed gold, may be imported for re-export within a limited period to approved destinations, subject to the transaction complying with any import licensing requirements in the country of destination.

"Rho-Anglo" Pays Same on Larger Capital

A preliminary profit statement issued by Rhodesian Anglo American announces the recommendation of a final dividend of 4s. 9d. per 10s. stock unit in respect of the year ended June 30 last, making, with the interim already paid, a total distribution of 6s. 3d., or 62½ per cent, the same as was paid in the preceding year. However, the interim and final dividend for 1952-53 are payable on a capital of £6,300,000 and £6,425,000 respectively, whereas both the interim and the final dividend distribution in the preceding year were paid on capital of £5,956,609.

Group profits expanded by £5,775,517 to £25,265,928. In this connection the statement points out that to the 1951-52 total profit figure of £19,490,411 was added £1,840,000 from sales by two subsidiaries from metal stocks which will have to be reinstated. After deduction for taxation these profits were retained by the subsidiaries in sales equalization reserves. After providing £9,951,208 (£8,059,675) for taxation, group net profit was £2,043,984 higher at £15,314,720.

Rhokana Changed Dividend at 225 Per Cent

Rhokana Corporation in a preliminary profit statement has announced the recommendation of a final dividend of 35s. per £1 unit of ordinary and "A" stock in respect of the year ended June 30 last, making, with the interim already paid, a total of 45s., or 225 per cent, the same as was paid in the preceding year. The net profit, after providing £4,219,784 (£4,255,535) for taxation, advanced to £8,391,027 compared with £7,860,922 in the preceding year.

Rhodesian Anglo American holds a majority interest in the equity of Rhokana. Sir Ernest Oppenheimer is chairman of both Rhodesian Anglo American and Rhokana Corporation.

Electrolytic Zinc's Lower Profits

An advance profit statement issued by the Electrolytic Zinc Company of Australasia dealing with results for the year ended June 30 last showed a drop in profits, after providing for amortization, depreciation and taxation, of £429,602 to £1,682,889. The carry forward at the financial year end was £261,104 compared with £307,878 brought in.

Year to June 30	*Working Profit*	*Taxation*	*Net Profit**	*Dividend Distribution*		*To Reserves†*
	£	£	£	%	£	£
1953	3,474,889	1,042,000	1,682,889	40	1,200,000	529,663
1952	4,982,491	2,120,000	2,112,491	45	1,350,000	742,857

* After providing £750,000 (1952 - £750,000) for amortization and depreciation.

† Allocated as between £179,663 (1952 - £92,857) for expenditure on new plant and development at West Coast Mine; £250,000 (1952 - £500,000) to reserve for new plant and development at Risdon, Tasmania; and £100,000 (1952 - £150,000) to general reserve.

The audit has been completed and the report and accounts are expected to be issued about the middle of November.

Waihi Investments and Exploration Assessed

The profit and loss account, the salients of which are summarized in the table below, appears to beg the question, why the company did not maintain its dividend at 10 per cent as the net profit figures showed a slight advance on that achieved in 1951.

Year to Dec. 31	*Gross Revenue*	*Taxation*	*Net Profit*	*Dividend*	*To Reserve*	*Carry Forward*
	£	£	£	%	£	£
1952	44,126	18,199	20,787*	7½	5,000	16,121
1951	41,587	16,960	19,413	10	Nil	10,562

* After providing for administration expenses of £5,140 (1951 - £5,484).

The report and accounts of Waihi Investments and Exploration for the year 1952 have now been published and contain for the first time the consolidated accounts of the group, consisting of the parent company and its three subsidiaries, Puket Tin-Dredging, Fluorspar Ltd., and Waihi Minerals Ltd.

The answer as to why shareholders have had to take a modest reduction in their dividend income presumably arises from the well grounded assumption that two of the company's subsidiaries, Fluorspar Ltd. and Waihi Minerals Ltd., both require additional finance to assist them in making their respective ways towards becoming paying propositions. Indeed, this endeavour required somewhere in the region of £50,000 during the year under review which caused the company to realize some of its investments—unfortunately at a loss. This in turn called for an allocation of £5,000 to investment reserve to offset the losses experienced and also to leave the investment reserve account in a more reasonable position to meet possible losses on realizations in the current year. At the end of last year the investment reserve was recorded in the balance sheet at £1,681 compared with £3,007 at the end of 1951.

The outlook for the current year is difficult to assess. Puket Tin Dredging's production for the first 9 months of the current year at approximately 220 tons is well down on the output achieved in the corresponding period of the preceding year of 360 tons—a fact which will make itself felt all the more as the average price for tin looks like being considerably lower than in 1952. On the other hand, Fluorspar Ltd. is making good progress, production has steadily increased and currently the company is concentrating on the production of acid grade material of high quality. The third subsidiary, Waihi Minerals Ltd., which owns the Magpie Mine in Derbyshire, is still in the prospecting stage, but should the evidence now available of considerable mineralization be sufficiently substantiated to justify the installation of a proper production plant, revenue would soon be forthcoming from this source. The company also has a minority interest in Harrietville (Tronoh) which is just managing to keep its head above water, but strong hopes are held out, not only by Waihi, but also by other companies in the Tronoh Malayan Tin Group who are also financially interested in this company, that with no more than a reasonable amount of luck the company will soon see better days.

Clutha River Makes Steady Progress

The report and accounts of Clutha River Gold Dredging, the New Zealand gold producer, covering the year to March 31 last indicates that the company continues to make steady progress. The dredge treated over 25 acres (20 acres) all in virgin ground and by virtue of the greater dredge throughput was able to hold the line on working costs per cubic yard remarkably well.

Year to Mar. 31	*Dredged (hours)*	*(cu. yds.) (000)*	*Per cubic yard Value (pence)*	*Cost (pence)*	*Production (oz.)*	*Gold Proceeds £*
1953	5,858	2,976	6.78	3.62	6,719	84,131
1952	5,501	2,679	7.05	3.32	6,736	78,716

Although the total gold output remained practically the same as in the preceding year the company benefited from the New Zealand Government's decision—taken on August 14, 1952—to allow the sale of gold on the free market. This enabled the company over the 7½ months in which this concession was in force to average £13 1s. 9d. per f.oz. compared with the standard price of £12 5s. per f.oz. which accounts for the improved gold proceeds.

Year to Mar. 31	*Gross Revenue £*	*Taxation £*	*Net Profit £*	*Dividend %*	*To Reserve £*	*Carry Forward £*
1953	85,822	18,035	11,682	6	4,000	7,764
1952	80,072	14,162	18,436	6	8,926	7,505

Operations during the current year are proceeding satisfactorily and during the period April 1-October 16 gold production totalled 3,854 oz., an increase of 599 oz. over the corresponding period during the year under review. Col. Charles Edward Ponsonby is chairman. Meeting, London, November 18.

Renong Tin Dredging Pays 30 Per Cent

Renong Tin Dredging is recommending a final dividend of 15 per cent making, with the interim already paid, 30 per cent for the year ended June 30 last compared with 35 per cent paid in the preceding year.

The net profit, after providing for all the usual charges and U.K. and Malayan taxation liabilities of £77,329 (£228,403), slumped from £136,903 to £44,279. This net figure was augmented by the crediting of £5,000 previously provided for E.P.L. and a transfer of £10,000 from contingencies reserve bringing the free surplus up to £59,279. Outgoings were less, particularly for repairs prior to the removal of the Gombak dredge, £38,375 against £65,052, and for depletion of the mine property £6,000 against £11,800. Additionally, nil was written off rehabilitation expenditure and off government securities against £5,300 and £11,000 respectively in the preceding year. Even so it was necessary to dip into the carry forward to the extent of £15,988 in order to service the preference dividend payment and to provide shareholders with a total payment of 30 per cent so that the forward balance at the financial year end was reduced to £26,760 compared with £42,748.

No doubt the vastly improved results achieved in the first three months of the current year had something to do with what is a generous distribution in the circumstances for during this period the company produced 228¾ tons tin ore compared with a mere 68 tons in the corresponding period of the year under review. Meeting, December 14.

Naraguta Tin Directors Re-elected

As was reported in this column last week, polls were demanded at the annual general meeting of Naraguta Tin Mines held on October 21 in connection with resolutions proposing the re-election of Mr. Herbert T. Skipp (chairman) and Mr. Homfray Ogle, and opposition resolutions proposing the election of Mr. C. W. Loch and Mr. H. G. Hall, whose nominations were being supported by shareholders associated with the Parish Group. When the result of the poll was declared last Monday, it was found that the retiring directors had been re-elected by a majority of approximately 30,000 votes and that the opposing resolutions had been defeated by a similar majority.

Only about 200,000 votes were cast out of a total of 440,000 issued shares, which is a sad commentary on the attention which the average shareholder pays to his investments. The policy change implicit in the opposition to the re-election of the present directors gave promise of being of an extremely fundamental nature and might well have had a major and lasting effect on the future of the company. Although in our opinion the decision reached as a result of the poll is in the best interests of the company, it can be of little satisfaction to any of the parties concerned that the decision was only reached on a 50 per cent poll, and it may well be that at some future annual meeting the status quo will only be maintained through the support of shareholders who omitted to exercise their voting powers on this occasion.

Cementation Pays 2½ Per Cent More

A preliminary profit statement issued by the Cementation Company announced that a dividend of 17½ per cent has been recommended for the year ended March 31 last compared with 15 per cent in the preceding year.

Group net trading profit, before taxation, advanced from £510,413 to £537,958. Taxation liabilities, including £58,000 (£5,000) for E.P.L. and transferring £44,500 (£53,000 credit) from taxation equalization reserve, required £350,308 against £316,338, leaving a net balance of £187,650 compared with £194,075 in the preceding year. After bringing in £142,808 (£196,231), the sum available stood at £329,610 (£435,733) of which £154,909 (£217,766) was dealt with by subsidiaries leaving the parent company with an available balance of £174,701 compared with £217,967. There was no allocation to general reserve against £75,000, the total distribution of 30 per cent (35 per cent) took a net £93,844 (£76,781) and after meeting the payments on the preference stock, the carry forward was £64,643 compared with £50,042 brought in. Mr. A. R. Neelands is chairman. Meeting, London, December 17.

Kentan Gold Areas New Finance Scheme

Kentan Gold Areas have announced that an extraordinary meeting will be convened on November 11 to consider resolutions for the reorganization of the company's capital structure and that of its subsidiary, Geita Gold Mining Company and for the provision of further working capital for Geita embodied in agreements with New Consolidated Gold Fields and Tanganyika Holdings. The feature of the new scheme is the reduction of Kentan's capital from £2,000,000 to £375,000 by the cancellation of 7s. per 10s. share.

The announcement reminds members that in March last New Consolidated Gold Fields, consulting engineers to Geita, reported that the company's outlook was sufficiently favourable to justify an expansion of operations involving approximately £100,000.

Indians in September

With only three months to complete their respective financial years, only one of the four Kolar Gold Field companies, Nundydroog, has improved its gold output compared with the corresponding period a year ago. Mysore, despite a much reduced throughput is not, however, far short of last year's corresponding total production figures but it will have to raise its sights considerably in the remaining three months of this year if it is to equal or better last year's final figure of 74,729 oz. To do so will require an average output per month of 7,182 oz. which is very unlikely.

Champion Reef is still maintaining a good mill throughput but the grade of ore currently being crushed has fallen off somewhat compared with a year ago.

Company	*September, 1953*		*Months since year end*	*Current Financial Year Total to date*		*Last Financial Year Total to date*	
	Tons (000)	*Yield (oz.)*		*Tons (000)*	*Yield (oz.)*	*Tons (000)*	*Yield (oz.)*
Champion Reef	13	4,358	9	99	38,232	119	52,939
Mysore	16	5,797	9	140	53,183	156	54,753
Nundydroog*	22	6,971	9	187	52,648	193	48,162
Ooregum	3	1,772	9	66	18,515	95	26,581

* Includes tailings.

Company Shorts

North Kalgurli Reduces Costs.—Mr. C. T. Ley, chairman of North Kalgurli (1912) at the annual meeting said that the company had achieved a considerable reduction in costs compared with a year ago.

North Kalgurli's new shaft came into operation in August last and by October there was a saving of over four shillings per ton in working costs—an improvement which was maintained until the end of 1952. During the current year, he said, allowing for the cost of all ore broken and remaining in the stopes, there had been a considerable reduction in costs during the first five months and there was sufficient evidence to show that the new shaft and underground mechanical equipment were reducing the company's costs very materially. A full report of the meeting will be found on page 511.

Rooderand Main Reefs Improved Results.—The Profit and Loss Account of Rooderand Main Reef Mines for the year ended June 30 last, showed that net profit, after providing for all the usual charges, including taxation liabilities of £10,259 (£574), was £34,658 compared with £4,155. The sum of

£100,000 (£250,000) was transferred to general reserve which reduced the carry forward to £51,661 compared with £117,000.

The company's principle interests consists of its large holding in Free State Development and Investment Corporation and the two "Freddies." The book value of the company's holdings in these three companies was equal to 77 per cent of the total book value of its quoted investments which, at the end of June last, was £2,566,662, compared with a market value at the same date of £1,758,004. At the end of June last the only unquoted shares the company held were 1,776 shares in Jeannette Gold Mines.

Van Ryn to Repay a Further 1s. per Share.—Van Ryn Gold Mines Estate whose capital now stands at £125,000 in 500,000 shares of 5s. each following the repayment of 1s. per share during the year to June 30 last, has now announced that it will repay a further 1s. per share and that an extraordinary meeting to effect this capital repayment will be held immediately following the annual meeting in Johannesburg on November 18 next.

The profit and loss account for the year to June 30 last showed an increase in the net profit, after providing for all charges including taxation of £11,876 (£4,698), from £13,090 to £28,627. The improved earnings were due almost entirely to the proceeds from the sale of machinery and plant which at £30,500 compared with only £6,800 from this source last year and enabled total income to rise to £51,619 against £29,455. The carry forward at the financial year end was £164,614 against £149,487 brought in. Sir George W. Albu is chairman.

Esperanza Copper Maintains Good Progress.—A progress report issued by Esperanza Copper and Sulphur for the period ended September 30 last, states that since the resumption of shipping last May a total of 22,450 tons of high grade Kinousa ore has been shipped and that an additional 10,000 tons is due for shipment before the end of the year.

Work at Limni is well up to schedule and several surface buildings have been completed.

In the Evloimeni section, some 1¼ miles from Kinousa and 1 mile from the main Limni workings, high grade copper, zinc, and sulphur ore has been encountered. As soon as practicable, the report states, a geophysical survey followed by a boring programme will be carried out to determine the extent and economic value of this orebody and its possible link up with both Kinousa and Limni.

Outlook Not Bright for Selukwe.—The Selukwe Gold Mining and Finance Company whose futures depend largely on the progress and profits of Silbak Premier Gold Mines, showed a net profit, after all charges including tax provision, of £1,781 compared with £7,861 in the preceding year. The sum of £5,000 was used to write down its investment in Silbak Premier which, because of the sharp drop in the lead and zinc prices has practically ceased operations apart from selective mining, and the foward balance at the end of March last was £3,363 compared with £6,582 brought in.

Chendai Shows Small Profit.—The profit and loss account of Chendai Consolidated for the year ended April 30 last showed a net profit, after providing for all charges including Malayan and U.K. taxation, of £96. The forward balance at the financial year end was £1,771 against £1,661 brought in. Mr. Stanley Wickett is chairman. Meeting, Redruth, Cornwall, November 2.

New Copper Company Formed in Southern Rhodesia.—United States and Canadian capital, with a strong holding already in South-West Africa, is behind a new mining company formed a few months ago to develop the copper deposits of the Hartley district in Southern Rhodesia. This new company, the Sebungwe Mines and Exploration Company (Pvt.) Ltd., announced on September 16, last, that it had taken over the operations of the Safari Exploration Company in Southern Rhodesia. The new company has been granted the exclusive prospecting rights within an area of 100 square miles around the Copper King and Copper Queen mines, and their surrounding claims, which have not been worked for about 27 years.

The Directors of the Sebungwe Mines and Exploration Company include Mr. M. D. Banghart (U.S.A.) and Mr. A. Livingstone, both of whom are directors of the O'Okiep Copper Company and Tsumeb Copper Company in South-West Africa and Mr. J. M. MacLeod, resident manager of the O'Okiep Copper Company. Other directors are Mr. J. G. Pain, of Bulawayo, Mr. E. W. S. Hunt (Canada), and Mr. C. E. Scott (U.S.A.).

Obituary

THOMAS ARTHUR RICKARD

News reached London recently of the death in Victoria, British Columbia, of Mr. T. A. Rickard at the advanced age of 89. Mr. Rickard had been retired from active work for some 20 years but during the period of his active life his name was a household word among mining engineers.

The bearer of a well known Cornish name he was born at Pertusola in Italy in 1864 and entered the Royal School of Mines in 1882, taking his associateship in metallurgy in 1885. Many years later he was to found the R.S.M. (Old Students) Association. After leaving the School he went to Colorado and California and later visited mines in Australia and New Zealand, and also had experience of management in France. In 1892 he returned to Colorado where he was appointed manager of the Enterprise mine. In 1895 he was appointed State Geologist of Colorado, a post which he held for several years. As consulting engineer in Denver, he made a detailed report on Stratton's Independence Mine which in the light of the subsequent unfortunate history of that undertaking was later considerably criticized.

Thereafter he turned more and more to mining journalism and in 1903 was appointed editor of *Engineering and Mining Journal*. Two years later he reported for the Government of Nova Scotia on the goldfields of that province. In 1906 he was appointed editor of the *Mining and Scientific Press* of San Francisco, a post which he held for three years subsequently resuming to the chair in 1922. During this period he came to England and established *The Mining Magazine* of which he became first editor in 1909, remaining in the chair until 1915.

Following the outbreak of the first world war he followed the example of ex-president Hoover and other leading American engineers and returned to the United States. Thereafter he established a great reputation as a writer on mining topics and for a time resumed his position as editor on the *Mining and Scientific Press* as well as being a contributing editor to the *Engineering and Mining Journal*. T. A. R. was the author of many well-known works on mining and metallurgy including the "*Sampling and Estimation of Ore in the Mines*," "*Stamp Milling of Gold Ores*," "*The Economics of Mining*," "*Pyrite Smelting*," "*The History of American Mining*," and the "*Romance of Mining*." To-day he is perhaps remembered best by his work "*A Guide to Technical Writing*" which had a profound and lasting influence on the style and clarity of mining report writing throughout the English-speaking world.

He was awarded its gold medal by the Institution of Mining and Metallurgy in 1932, and was an active member of the American Institute of Mining Engineers and the Canadian Institute of Mining and Metallurgy.

NORTH KALGURLI (1912), LIMITED

The Annual General Meeting of North Kalgurli (1912) Limited was held on Wednesday last at Winchester House, London, E.C.2.

Mr. C. T. Ley (Chairman), who presided, said: Since the time of our last meeting the death has occurred of Mr. K. L. Brinsden who was the General Manager of The Croesus Proprietary Treatment Coy. His sudden death came as a great shock to us all. We have already expressed, on your behalf, our sympathy to his widow and parents.

When considering the Balance Sheet it is necessary to bear in mind that the year under review ended in 1952. The increase in Capital and distribution of the Share for Share Capital bonus sanctioned in July last are not included in these Accounts. Shareholders will nevertheless receive the final dividend, now about to be declared, on holdings that have been increased by the Share bonus. Provided the proposed dividend is approved, shareholders will then have received an interim dividend of 6d. per share, less tax, paid in April; and will be receiving a final dividend of 7½d. per share, less tax, now being paid on double the number of shares; or compared with the previous year, 1s. 9d. a year, less tax, against 1s. 3d. a share, less tax.

Profit for the period before taxation is £10,416 greater at £106,005. Taxes however at £60,526 against £48,802 also show an increase of £11,724. Last year we had the benefit of £15,000 tax relief on initial allowances.

With the amount brought forward, less the interim dividend, there is a surplus of £80,990, out of which we are recommending the payment of a final dividend of 7½d. per share, less tax, on the increased Capital, requiring £37,813; leaving a balance to be carried forward of £43,177.

Since the date of the Balance Sheet, the authorized capital of the Company has been increased to £500,000 by the creation of a further 2,500,000 shares of 2s. each; and the issued Capital has been increased by £220,000 by capitalizing a sum of £110,000 representing the Share Premium Account of £84,854 and £25,146 from Capital Reserves. The balance of Capital Reserves carried forward will now amount to £11,282.

REVENUE RESERVES

In accordance with our normal practice, non-mining income for the year of £789 has been transferred to the Reserve Account, which now stands at £13,926. Contingencies Reserve remains unchanged at £25,000. The Advance Development Reserve of £96,064 which appears on the Balance Sheet for the first time and is in offset to the balance of £116,445 being carried forward on Advance Development Account on the assets side of the Balance Sheet. Including the reserve of £41,500 in respect of the estimated liability to United Kingdom Income Tax on the profits for the period covered by the Accounts, the Company's revenue reserves total £219,667.

TAXATION

The Company's liabilities to United Kingdom taxation on profits to date are included in the balance sheet under the headings of "Future Income Tax" £41,500 and "Current Taxation" £16,628. These figures compare with amounts of £11,500 and £172,434 respectively, appearing in the balance sheet at January 1, 1952. The Company's assessments to taxation for the fiscal years 1947/48 onwards have been under review by the Company's Auditors in the course of finalizing the allowances due to the Company under the provisions of the Income Tax Act, 1945, and the Inland Revenue have now agreed that expenditure on operating development should be allowed for taxation purposes as and when incurred, in place of the previous annual allowances based on the relationship between the tonnage treated and ore reserves. On this new basis, the Company's Taxation assessments for past years have now been finalized and, as a consequence, **outstanding liabilities** are reduced by £96,064. In adjustment £42,314 has been repaid in cash and £53,750 dealt with by means of a reduction of outstanding assessment liabilities.

ADVANCE DEVELOPMENT

In connection with this item I would explain that for many years—in fact dating back to the recommencement of mining operations in the early 1930's—all expenditure on operating development was, in the first instance, charged to Advance Development and appropriate amounts were then written off to Profit and Loss Account having regard to the tonnage treated, ore reserves and other relevant factors. In the last two years, however, Profit and Loss Account has been debited with the actual expenditure incurred on operating development, with the result that the amount of £116,445 carried forward on Advance Development Account has remained unchanged.

As the reduction in the Company's taxation liabilities, to which I have referred, is to a material extent linked with the treatment of Advance Development Account, your Directors have considered it desirable to allocate the full recovery of £96,064 to a reserve account. The future treatment for accounting purposes of Advance Development Account is under consideration by the Board and, depending on the circumstances, it may at some future date be decided to appropriate all or part of the Advance Development Reserve in reduction of this item.

BANK OVERDRAFT

The Bank overdraft—£42,197—mainly arose in September last in connection with the financing of the new shaft which was completed during the year. Since the end of the financial year the overdraft has been entirely repaid.

Ore hoisting through the New Shaft commenced on August 4, 1952. During the following two four-weekly periods costs were at first slightly higher, but the October return showed a saving in costs of over 4s. a ton. This figure was maintained until the end of 1952, which is the period covered in the Accounts now under review.

During the present year, allowing for the cost of all ore broken and remaining in the stopes, the first five months show a considerable reduction in costs over last year, and is sufficient evidence to show that the New Shaft and underground mechanical equipment are reducing our costs very materially.

The rise in wage rates and materials continued during the whole year. It was not until the last three months of the year that saving in costs from the operation of the New Shaft was felt and any reduction became evident. The average working costs over the whole year show an increase of 10.6 per cent on the previous year's costs. During the same period wage rates increased by approximately 13 per cent, and materials by 7½ per cent.

Ore treated was some 13,578 tons less than the previous year, although our quota at both plants was fully filled, with some increase in grade amounting in ounces to 1,447. It so happened that the amount of ore treated at the Kalgurli Ore Treatment Plant during 1951 was rather above the amount of our quota and would account for the reduction which took place during the following year. Both the joint Treatment Plants have functioned satisfactorily throughout the year.

Mr. T. D. Field was appointed as General Manager to the Croesus Proprietary Treatment Coy., and has already introduced some improvements which have been the means of increasing the throughput to some extent.

ORE RESERVES

Our total ore reserves are estimated at 2,234,415 tons of an average grade of 5.57 dwt., against 2,183,162 tons of an average grade of 5.62 dwt. This is an increase of 51,250 tons which if it had been sent for treatment would have represented a further 4,000 tons each period.

Developments were rather restricted during the first six months of the year, but with the completion of the Shaft a total of 9,806 feet for the year was finally reached. A run of 106 feet assaying 15.6 dwt. per ton over a width of 7 feet is mentioned in the North Kalgurli Section on No. 10 Level. In the Kalgurli Section on the important No. 5 Level, a drive 264 feet in length, with an average width of 5 feet, gave values of from 3.2 to 10.5 dwt. per ton. Recent reports mention also in this Section an advance of 86 feet averaging 7.1 dwt. per ton on the No. 17 Level.

While diamond drilling in the Kalgurli Section in a hole bored from the South side of the No. 8 Level intersected 60 inches of ore averaging 44 dwt., 42 inches assaying 4 dwt., 36 inches 10 dwt., and 336 inches assaying 6.4 dwt. per ton; and in the North Kalgurli Section a hole on the No. 6 Level intersected 18 inches of ore assaying 347 dwt. per ton.

I regret to report that we have lost the services of Mr. Gerald Lee, Assistant Underground Manger, owing to ill-health; and I am sure that you will join me in wishing him a speedy recovery.

Last year, as in previous years, we were indebted to our General Manager, Mr. A. A. McLeod, and to his Staff, for the enthusiasm and efficiency with which they carried out their duties. To have completed a major engineering undertaking of such magnitude in under two years is indeed an achievement to be proud of, and I am sure that you will again wish to record your appreciation by means of a hearty vote of thanks.

I beg to move that the Directors' report and Statement of Accounts for the period ended December 30, 1952, as submitted to this meeting be received and adopted; that a dividend No. 38 of 7½d. per share, less income tax, be now declared for payment on October 29, 1953; and that the balance of revenue amounting to £43,177 be carried forward.

Mr. F. G. Wright seconded the resolution which was carried unanimously.

The retiring Director, Mr. F. G. Wright, was unanimously re-elected and the auditors, Barton Mayhew and Company were reappointed.

The proceedings terminated with a vote of thanks to the General Manager and staff.

AMALGAMATED TIN MINES OF NIGERIA

CHAIRMAN'S STATEMENT

The fourteenth annual general meeting of Amalgamated Tin Mines of Nigeria Ltd. was held on October 27 at 55-61 Moorgate, London, E.C.2, **Mr. J. Ivan Spens, O.B.E.** (the chairman), presiding.

Mr. W. C. Thomas (representing the Secretaries, The Anglo-Oriental and General Investment Trust, Ltd.) read the report of the auditors.

The following is the statement by the Chairman which had been circulated with the report and accounts:—

Accounts.—Whilst the production of tin concentrates increased by 60 tons over the previous year the average price received fell from £947 per ton to £890 per ton. Columbite production, however, increased from 304 tons in the previous year to 575 tons in the year under review.

The Government of the U.S.A. offered in May 1952 a bonus of 100 per cent on all columbite ore shipped to America within certain tonnage and time limits and this, together with the increase in production, accounts for the increase in gross proceeds of some £500,000. Against this, taxation increased by £351,000 and costs by some £50,000. Due to the fluctuations in the price of tin and to the Government of Nigeria's methods of charging Royalty on the average price ruling in the quarter previous to shipment the Royalty reserve which had been formed became exhausted and it has been thought advisable to put a further £100,000 to this reserve.

A sum of £225,000 has been appropriated as additional depreciation and depletion against the £200,000 put to special depreciation last year. This £225,000, together with the balance of £100,000 in the Special Depreciation Reserve and the Capital Reserve of £275,694, which reserve was created out of the unappropriated balances on Profit and Loss Account of the two constituent Companies on the merger in 1939, has been used to write down the property and plant to £525,000.

ORE RESERVES

At the end of the year the figure for these was 47,568 tons tin concentrates which shows a net decrease on the year of 2,962 tons, against a production figure of 4,710 tons.

Labour.—A new Agreement was made with the African Union in May of last year which covered leave conditions, and in November new scales of wages satisfactory to both sides were agreed. Relations with Labour have remained satisfactory.

Columb'te.—As I have mentioned above production of columbite increased considerably. We have been able to map out more clearly the areas where columbite occurs with the tin ore and are recovering in the normal process of mining an increased quantity apart from our recovery from the dumps.

SUBSIDIARY COMPANIES

Keffi Tin Company Ltd. is, as you know, a wholly-owned Nigerian registered subsidiary company of Amalgamated Tin Mines of Nigeria Ltd. A geological survey showed that there were considerable quantities of columbite in the biotite granite underlying some of the areas on the Plateau. It has been decided that the mining and recovery of this columbite, necessitating as it does new methods and special plant, should be kept entirely separate from tin mining and conducted by the Keffi Company, and any lease which is found mainly to contain columbite in biotite granite will be worked by that company. The Keffi Company's tin areas have been transferred to London Nigerian Mines Ltd., a Nigerian registered company, the balance of the capital not already held having been acquired by us for a nominal consideration. The proved reserves of columbite in the biotite granite which can be economically mined at the current price are at present estimated at around 15,000 tons. There are still areas of similar country to be prospected, and I am hopeful these reserves of columbite will be very substantially increased as a result of our present prospecting programme. Mining and recovery of this columbite has only lately commenced and it is too early yet to give figures of results. The profits of Keffi Tin Company Ltd. were again satisfactory.

Lead/Zinc Areas.—Further work on these areas was carried out during the dry season. No indication of a large ore body was found and operations have been abandoned.

PRICE OF TIN

Since March of this year there has been a heavy decline in the price of tin and this is now at a level at which higher cost producers cannot work at a profit and at which few companies can put aside sufficient reserves to ensure the future. It is essential to the industry, and in the long run to consumers, that the industry be kept in a position in which it can plan for the future by prospecting and the acquisition of plant and machinery which in these days means considerable expenditure. This company alone has spent over the last three years more than £1,000,000 on new plant and machinery and more than £250,000 on prospecting.

Following the meeting of the Working Party of the Tin Study Group in Brussels in June 1953, I understand that a Commodity Conference under the United Nations is to be called later in the year to consider the general position and the drawing up of an agreement for the regulation of the production of tin, as with the approaching end of stockpiling in America there will inevitably be an increase in the surplus of production over the off-take by consumers.

Welfare.—This subject has again had considerable attention both from the Board and the Management, and I would refer you in this connection to the Technical Managers' Report.

STAFF

We have every reason to be grateful to the Management and Staff for what they have achieved during the year and I am sure shareholders will support me in sending them our thanks.

I visited the properties in April and May of this year. Nigeria has been going politically through difficult times, but one can hope that the recent conference in London between the Colonial Secretary and Nigerian representatives will render the position more stable.

The report and accounts were adopted and the final dividend of 14 per cent, making 30 per cent for the year, was approved.

The retiring directors, Mr. J. Ivan Spens, O.B.E., and Mr. G. C. Devas, were re-elected and, the other formal business having been duly transacted, the proceedings terminated.

NARAGUTA TIN MINES LIMITED

EXISTING POLICY VINDICATED

The Eighteenth Annual General Meeting of Naraguta Tin Mines Limited was held on October 21 at Winchester House, London, E.C.2, **Mr. Herbert T. Skipp,** Chairman of the Company, presiding.

The Directors' Report and Accounts to December 31, 1952, and the Chairman's Review for the year having been taken as read the Chairman stated that the Shareholders were aware of the now disclosed purpose of the requisitionists, and that in appointing Directors at the meeting the shareholders would thereby be voting either in support of the policy hitherto followed by the present and former boards or for the programme of the requisitionists. The Chairman then recalled that the Tin Mining Industry was in the presence of a serious crisis and that two of the present Directors come up for re-election and that the shareholders were accordingly being asked to change horses in mid-stream. He then summarized the financial results of the Company since its formation in 1934 and recalled that he had been a Director since that date and Chairman of the board since 1942, and that Mr. Ogle had been a Director since 1942 prior to which his firm had been the Company's Auditors.

Turning to the details of the requisitionists' proposals, the Chairman initially stated that the shareholders were being invited to go on an unnamed journey and that the description of the requisitionists' plan—a new and vigorous policy—might unconsciously mislead the shareholders as to the direction in which the requisitionists intended to travel. In the latter connection, he stated there was a minimum of reference to the business of the Company in the requisitionists' programme, which in the view of the Directors was permeated throughout with proposals which were prejudicial to that business, and indicated a greater interest in financial operations in which the Company might only be a pawn in a game. The requisitionists' new and vigorous policy would lead the shareholders to expect that the first item in their proposed programme would concern the Company's present business, and that if the requisitionists had any new business to propose, it would be fully and clearly stated. In the forefront of the programme however was a proposal to make a payment in cash at the earliest opportunity from the Company's Revenue Reserve Accounts provisionally estimated at not less than 2s. 6d. per share gross. That proposal, and its priority of place in the programme, was of high significance and was the red light at which the shareholders should stop and consider with the utmost care both the proposal itself and what the requisitionists omitted to tell the shareholders with regard thereto; and also what the proposal and the omissions implied so far as concerned both the requisitionists' new policy and their proposed programme as a whole. The Chairman stated that he wished at once to say that the proposal was of a nature which in these difficult days must make a strong initial appeal to every shareholder, and it of course was most attractive to the requisitionists themselves, as the payment would go to recoup those whom they represented for their outlay in buying the Company's shares on the market. The proposal, however, would largely, if not entirely, wipe out the reserves which had been built up against future contingencies, and with tax at 9s. in the £ would involve a total distribution of

£30,250. In addition, that distribution would attract additional profits tax, estimated by the Company's Tax Accountants, at no less than £11,000, and this cash distribution would therefore involve a total payment of no less than £41,250, which would be reckless finance.

The Chairman also pointed out that the requisitionists stated that it was proposed to make a study, with the assistance of expert advice, on the possibilities of increasing reserves and production, yet in advance of that study they themselves estimate the net liquid assets which they consider ample for the programme envisaged.

With regard to the requisitionists' statement that any very substantial cash offers for some or all of the Company's properties would be submitted for shareholders' consideration, the Chairman drew attention to the fact that the requisitionists were envisaging the sale not only of some but of the whole of the Company's properties, which was added confirmation that the primary intention of the requisitionists was not to further the business for which the Company was formed, and very important points accordingly arose. If the requisitionists had really serious purchasers in mind, how was it that they had not opened negotiations with the Company before this?

The Chairman concluded by stating that the choice before the shareholders was whether they would support their present Directors or would take a leap in the dark.

The report and accounts were adopted, and the payment of a Dividend of 7½ per cent, less tax, approved, and resolutions were then successively proposed for the re-election of Mr. Herbert T. Skipp and the reappointment of Mr. H. Ogle as Directors of the Company, and for the electing of Mr. C. W. Loch and Mr. H. G. Hall as new Directors. On each of these resolutions a Poll was demanded which the Chairman directed to be taken at the conclusion of the meeting, and the Company's Auditors and Mr. J. A. Weatherley, one of the requisitionists, were appointed joint scrutineers.

RESULT OF THE POLLS

The results of the four polls were announced by the joint scrutineers on October 23, 1953, as follows:

1. Resolution proposing the re-election of Mr. H. T. Skipp: 115,594 votes for; 83,204 votes against.
2. Resolution proposing the reappointment of Mr. H. Ogle: 114,391 votes for; 84,516 votes against.
3. Resolution proposing the election of Mr. C. W. Loch: 86,941 votes for; 112,486 votes against.
4. Resolution proposing the election of Mr. H. G. Hall: 86,997 votes for; 111,444 votes against.

Accordingly, Mr. Herbert T. Skipp and Mr. H. Ogle have been re-elected to the Board, and the proposals to elect Mr. C. W. Loch and Mr. H. G. Hall have been defeated.

RHODESIAN ANGLO AMERICAN LTD

DIVIDEND NO. 34

The Directors to-day resolved to recommend to the forthcoming Annual General Meeting the payment of a final dividend of four shillings and nine pence per unit of Stock in respect of the year ended June 30, 1953. Particulars of total dividends and profits, together with those for the previous year, are:

		1953	1952
Dividends		s. d.	s. d.
Amount per 10s. Unit of Stock—			
Interim		1 6	1 3
Final		4 9	5 0
Total		6 3	6 3
Profits			
Group Profits before taxation—			
Normal		£25,265,928	£19,490,411
Exceptional (see Note (a) below)		—	1,840,000
		25,265,928	21,330,411
Deduct taxation (see Note (b) below)		9,951,208	8,059,675
Group net profits for the year ...		£15,314,720	£13,270,736
Profits attributable to members of Rhodesian Anglo American Limited		£6,715,417	£6,176,235
Profits retained in Subsidiaries' Accounts		2,801,968	2,221,482
Net profits in Rhodesian Anglo American Limited Accounts ...		£3,913,449	£3,954,753
Interim and Recommended Final Dividends (see Note (c) below) ...		£3,996,875	£3,722,880

Notes—(a) The exceptional profits of £1,840,000 (1952) arose on sales made during that year by two subsidiaries from metal stocks which will have to be reinstated; after deduction of taxation those profits were retained by the subsidiaries in Sales Equalization Reserves.

(b) Taxation includes £370,000 charged in the accounts of Rhodesian Anglo American Limited in respect of an unforeseen liability for United Kingdom Profits Tax for the six months ended December 31, 1950.

(c) The interim and final dividends for this year are payable on a capital of £6,300,000 and £6,425,000 respectively. Both interim and final dividends last year were paid on a capital of £5,956,609.

PAYMENT

If the dividend recommendation is approved, Dividend Warrants will be posted on or about December 16, 1953, to members registered at the close of business on November 13, 1953. The transfer registers in London and Johannesburg will be closed from November 14 to 20, 1953, inclusive.

This dividend recommendation is based on payment being made in United Kingdom sterling. Payments to members registered on the Branch Register will be made in the equivalent Union of South Africa currency, provided that if, in the opinion of the Directors, there is no material difference between the two currencies at the time of payment of the dividend, such members will receive payment at par of exchange.

Dividends payable to addresses in the United Kingdom will be subject to deduction of United Kingdom Income Tax at a rate reduced by a provisional allowance for relief from double taxation. Other dividends will be paid without deduction of tax.

For and on behalf of
Anglo American Corporation of South Africa Limited.
Registrars and Transfer Agents in England.

G. E. SIMMONDS
Assistant London Secretary.

11 Old Jewry, London, E.C.2.
October 28, 1953.

BERALT TIN AND WOLFRAM

MR. F. GATES ON THE OUTLOOK

The twenty-fifth annual general meeting of Beralt Tin and Wolfram, Ltd., was held on October 29, 1953, at Winchester House, London, E.C.

Mr. F. Gates, chairman of the company, presided.

The Chairman, in the course of his speech, said: It is a great pleasure to present to you accounts which record the result of another successful year's operations. The market price of wolfram, our principal product, which during the previous financial year ranged between 560s. and 485s. per unit, fell steadily during the year under review from the latter price to 330s., so that a substantial fall in profits as compared with the previous year was inevitable. This fall would have been considerably greater but for the fact that more than one-half of the year's production was covered by long-term contracts at prices appreciably higher than the average market price for the year.

As from October 1, 1953, only 40 tons of wolfram concentrates per month, less than a quarter of the total production, remains covered by a fixed-price contract and the average selling price will, therefore, in the absence of unexpected developments, approximate more closely to the market price current from time to time. As you will be aware, this has fallen further since the end of the financial year to 260s. per unit.

IMPROVEMENT OF PLANT AND EQUIPMENT

The company's prosperity during recent years has offered an opportunity to modernise and improve plant and equipment which has not been missed. You will notice an expenditure during the year under review on fixed assets (including work in progress) of over £80,000. This represents mainly the cost of extending the old Panasqueira Mill and making minor additions to the River Mill, erecting the new canteen at Barroca Grande and improvements in housing for workmen and staff.

The capital commitments of £40,000 referred to in a note on the balance-sheet relate for the most part to plans now well advanced for converting the River Mill from D.C. to A.C. electric power, which will result in greater efficiency and reduced costs, and for the installation of two English Electric diesel generating sets. These two sets, one of which is already installed, together with the Belliss and Morcom diesel engine available at Barroca Grande to drive one of the compressors there, will provide sufficient stand-by power for full maintenance of the company's production even if, through prolonged drought or other cause, the "grid" power were entirely cut off.

HEAVY TAX BURDEN

I come now to the subject of taxation. Out of a gross profit of nearly £2,250,000, almost £2,000,000 has to be provided for taxation in Portugal and the United Kingdom, the exact figures representing total tax of over 16s. 3d. in the £, a rate which no company, least of all a company working a wasting asset, could support indefinitely.

You will probably have seen reports that the Portuguese export tax on wolfram concentrates has recently been modified. It was originally levied at a fixed rate equivalent to £500 per ton, irrespective of the wolfram price, which represented roughly one quarter of the value of wolfram at the time the tax was imposed.

The tax is now calculated on a sliding scale formula based on the price at which the wolfram concentrates are sold and on this new basis, with a selling price of 300s. per unit and the present rate of exchange, works out at about £350 per ton, which, although substantially lower than the former tax, represents a larger fraction, about one-third, of the value of the wolfram.

You will, I am sure, agree with me that Portugal has every right to share in the company's prosperity, but an export tax on this scale imposes on the company an unduly heavy burden and one which would become very difficult to support with lower wolfram prices.

The company's taxation position is aggravated by the fact that the Portuguese export tax is ineligible for unilateral tax relief in the United Kingdom. The company is thus entirely deprived of a U.K. tax relief which was expressly designed—and increased to 100 per cent in this year's Finance Act—with the purpose of assisting British companies operating overseas. It is to be hoped that the Royal Commission on the Taxation of Profits and Income, to which representations have been made on this aspect of tax relief, may recommend measures to remedy this gross injustice.

ORE RESERVES

It is interesting to note that the reopening of the Panasqueira Mill has made it possible to treat ore from the upper part of the mine, work on which had been left in abeyance when that mill was closed until sufficient ground had been opened up on No. 1 Level. Ore from this source, which is of quite good grade, has made a useful contribution to production, but the bulk of output has come from the ground between Main Adit and No. 1 Level which continues to open up satisfactorily.

Although we have drawn heavily during recent years on the ore reserves so far made available, I do not feel it necessary at present to sound any note of warning on this aspect of our operations. It is true that we have extracted almost all of the ore above Main Adit, including the old Panasqueira area, but we are assured of ample reserves for the next few years in the block, 200 ft. deep, between Main Adit and No. 1 Level. Furthermore, work between that level and No. 2 Level, 325 ft. lower, is giving promising indications of the continuity of veins to that depth. Much more remains to be done, however, before I can speak with any certainty of the quantity or the grade of the ore in this lower block.

Work has continued in the Vale da Ermida and a quantity of ore from that section has been tested in the Panasqueira Mill. These tests confirm the belief that tin and wolfram values persist over an extensive block of ground running into millions of tons, but have made it clear that these values are not high enough to permit of profitable working by our normal mining methods. We are not without hope, however, that some method of low-cost bulk mining and subsequent treatment of the ore may eventually be devised to meet the special problems presented by the nature of the ground in this area.

You may be sure that, in view of the potential importance of this area, the further tests that are still required will be carried on to the fullest possible extent consistent with maintenance of normal production and that we shall continue to give the most careful study to the various problems which have to be solved before the area can prove profitable.

In conclusion, I should like to acknowledge once again the great debt we all owe to the unflagging exertions of our staff in Portugal and, in particular, to our general manager, Mr. G. A. Smith, who in November last completed 20 years of wholehearted and efficient service to the company in Portugal. It was a great pleasure, both to the Board and to me personally, to recognize his contribution to the company's present prosperity by appointing him a director.

The report and accounts were adopted.

WAIHI INVESTMENTS AND EXPLORATION LIMITED

The 17th annual general meeting of the Company was held at 48 Gresham Street, London, E.C.2, on October 20, 1953.

Mr. G. R. Mitchison, C.B.E., Q.C., M.P. (Chairman of the Company), who presided, in the course of his speech said: You will see that this year in accordance with the requirements of the Companies Act the report contains not only the accounts of this Company but the consolidated accounts of the group consisting of this Company and its three subsidiaries. Turning to this Company's balance sheet you will see that during the year we have sold about £50,000 of investments. This was partly for the purpose of increasing our loan to Fluorspar Ltd. and our shareholding in that company, and partly to provide additional funds for Waihi Minerals Ltd. In the result so far as this Company is concerned we are left with limited liquid resources. On the other hand, as the consolidated balance sheet shows, the group holds considerable current assets in excess of current liabilities.

Puket Tin Dredging Ltd., as you will gather from the dividends paid, had in 1952 another successful year, broadly similar to 1951. The final balance in its profit and loss account for the year amounted to £59,468 out of which after paying dividends, £10,000 was written off property account and £12,000 transferred to reserve, while the carry forward was increased by about £4,000.

Fluorspar Ltd. has continued to have troublesome difficulties. During the year under review there was some trading profit, but it was more than eliminated by provision for depreciation, debenture interest, and an adjustment in respect of some stock piles. There are, however, some encouraging features. We are concentrating on the production of acid grade material of high quality. That production has considerably increased and continues at a reasonably steady level. The mine remains satisfactory.

Waihi Minerals Ltd. owns the Magpie Mine in Derbyshire where we are continuing to prospect. It is still too soon to say whether the results will justify a proper production plant, but there is evidence of considerable mineralization.

In Harrietville (Tronoh) Ltd. we hold a minority interest, and our loan to that Company corresponds to similar loans made by three other companies which are in the Tronoh group.

The report and accounts were adopted.

ANGLO-TRANSVAAL CONSOLIDATED INVESTMENT CO. LIMITED

Mining Companies' Directors' Reports for Quarter Ended 30th September, 1953

Following are the reports on work done during the quarter ended 30th September, 1953

ANGLO-TRANSVAAL COLLIERIES, LIMITED

The Sales Output of the Subsidiary Collieries controlled by this Company for the quarter ended 30th September, 1953, totalled **247,028** tons.

EASTERN TRANSVAAL CONSOLIDATED MINES, LIMITED

The total tonnage treated during the quarter ended 30th September, 1953, by the four gold mines operated by this Company amounted to **57,499** tons, resulting in a Working Profit (including Sundry Revenue) of **£48,319** for the quarter.

Revenue from the sales of gold during the quarter, at higher than standard prices, amounted to **£2,121**, making a total Profit for the quarter of **£50,440.**

The Profit, as shown above, does not take into consideration the amount, estimated at **£11,000** for the quarter, payable to the Government in Mining Taxation. Capital Expenditure during the quarter, amounted to **£35,697.**

DEVELOPMENT—The total development footage amounted to **10,077** feet.

REDUCTION PLANT—Preparatory work in connection with the erection of a Reduction Plant at Sheba Gold Mine is in progress. At present, ore produced at the Sheba Mine is conveyed by aerial rope-way for milling at the New Consort Gold Mine. On the completion of the new Sheba plant, ore will be milled and partly treated at Sheba and concentrates only will be conveyed to New Consort for roasting and final treatment. Experiments are being conducted on the use of a cyclone and plane table in the New Consort and Sheba mill circuits with the object of improving plant efficiency.

POWER SUPPLY—Work on the extension of the New Consort Power Station is nearing completion.

HARTEBEESTFONTEIN GOLD MINING COMPANY, LIMITED

SHAFT SINKING

No. 1 SHAFT—Sinking was resumed on 1st September, 1953, and the shaft was sunk **150** feet in Dolomite to a total depth of **250** feet. The intersection in pilot holes of water-bearing fissures, requiring cementation, delayed sinking operations.

The shaft is being concrete lined and equipped with steel buntons and guides concurrently with sinking operations.

The shaft was lined to a depth of **200** feet, of which **100** feet were accomplished during the quarter, and was equipped to a depth of **150** feet.

No. 2 SHAFT—No sinking work was done, the shaft depth remaining at **100** feet. The shaft has been stopped temporarily during the erection of the permanent headgear.

SHAFT SINKING EQUIPMENT

No. 1 SHAFT—The **1,150** h.p. permanent North Electric Hoist was erected. This hoist, the permanent South Electric Hoist and the Stage Hoist are in commission. The erection of the cylindrical reinforced concrete headgear and the installation of the internal steelwork and sheave wheels were completed.

No. 2 SHAFT—The **1,150** h.p. South Hoist was erected and the building to house this hoist was completed. Work on the erection of the **4,700** h.p. permanent North Electric Hoist, together with its building, is in progress. The building for the Stage Hoist was constructed and work on the erection of the Stage Hoist is nearing completion.

The shell of the cylindrical reinforced concrete headgear was completed to its final height of **145** feet and work is in progress on the internal steelwork.

Work on the second concrete mixing plant was completed.

EUROPEAN HOUSING—During the quarter **72** houses in an extension of the Stilfontein Township were completed and occupied. Work on a further **31** houses is nearing completion. The single quarters block of **40** rooms, together with a Mess, was completed.

NATIVE HOUSING—The initial building programme to house **900** Natives in the permanent Compound, was completed.

POWER SUPPLY—The erection of the power station building, the **3,000** K.W. Steam Turbine generating plant and of one boiler was completed and the generating plant was brought into operation early in September 1953 with an initial production of **1,000** K.W. The erection of the second boiler is nearing completion.

COMPRESSED AIR SUPPLY—The erection of two **6,000** cubic feet per minute air compressors, the Compressor House and the installation of electrical equipment were completed and one compressor is in operation.

WATER SUPPLY—A supply of water, adequate for present requirements, is being obtained from boreholes sunk on the property and in the Township area. The erection of a reservoir and a steady-head tank in the Township, and the water reticulation to the dwelling houses were completed.

MINE BUILDINGS—The construction of the permanent Mine Stores building and of the first **600**-case explosive magazine was completed. Work on the permanent Workshops is nearing completion.

LABOUR—The Labour strength at the end of the quarter was: Europeans, **143**; Natives, **713.**

CAPITAL EXPENDITURE—Capital Expenditure amounting to **£464,161** was incurred during the quarter on shaft sinking, buildings and plant.

The total Capital Expenditure, including preliminary expenses, incurred to 30th September, 1953, amounted to **£1,806,397.**

MERRIESPRUIT (ORANGE FREE STATE) GOLD MINING COMPANY, LIMITED

DEVELOPMENT—A total of **1,612** feet of underground development from No. 1 Shaft on the 35th Level (3rd station) was accomplished and in addition, **19,510** cubic feet were excavated in service bays and temporary sumps. Progress was retarded due to the intersection in pilot holes of water-bearing fissures, requiring cementation.

Development was stopped temporarily on 14th September, 1953, for the purpose of installing permanent shaft equipment.

The following are the results of the quarter's development:

Footage advanced	1,612
Footage on reef (Basal Reef)	905
Footage sampled	915
Payable Footage Sampled:	
Payable footage	525
Percentage Payable	57.4%
Channel width—inches	50.6
Channel value—dwt.	5.40
In.-dwt.	273

(The above results are based on actual sampling. No allowance has been made for adjustments necessary in the valuation of the corresponding Ore Reserve.)

SHAFT EQUIPMENT—Work in connection with the installation of the permanent shaft equipment was commenced towards the end of the quarter. The erection of the service winder was completed.

DIAMOND DRILLING—Drilling in Borehole K.A.2 and in Borehole K.A.3, situated on the farm Kaallaagte No. 562 was completed and the following results were obtained during the quarter:

Borehole Number	Reefs Intersected: Reef	Depth (Feet)	Value (Dwt.)	Corrected width (In.)	In.-dwt.	Remarks
KA.2	Leader Reef	2,848	1.05	51.8	54	1st Deflection
		2,848	0.98	26.6	26	2nd Deflection
	Reefs in the Basal Reef Zone	2,888	40.61	71.0	2,883	1st Deflection
		2,901	5.42	55.9	303	1st Deflection
		2,901	7.73	39.8	308	2nd Deflection
		2,930	10.8	5.9	64	1st Deflection
		2,930	12.8	4.9	63	2nd Deflection
		Core recovery was complete in all intersections				
KA.3	Leader Reef	2,810		negligible values		Original intersection
		2,796		negligible values		1st Deflection
		2,796		negligible values		2nd Deflection
	Reefs in the Basal Reef Zone	2,823	23.2	18.8	436	Original intersection
		2,824	8.64	71.5	618	1st Deflection
		2,827	4.76	41.7	199	2nd Deflection
		2,834	2.61	56.0	146	Original intersection
		2,834	2.38	38.9	93	1st Deflection
		2,834	0.68	41.6	28	2nd Deflection
		2,849		negligible values		1st Deflection
		2,849		negligible values		2nd Deflection
		Core recovery was complete in all intersections				

EUROPEAN HOUSING—Work is proceeding on the permanent housing programme in the Virginia Township. At the end of the quarter, **15** houses were completed and **27** houses were under construction.

LABOUR—The Labour strength at the end of the quarter was: Europeans, **74**; Natives, **420.**

CAPITAL EXPENDITURE—Capital Expenditure amounting to **£207,342** was incurred during the quarter. The total Capital Expenditure, including preliminary expenses, incurred to 30th September, 1953, amounted to **£2,874,239.**

MIDDLE WITWATERSRAND (WESTERN AREAS), LIMITED

The Company retains its interests in Mineral Rights in the Virginia and Odendaalsrus Districts of the Orange Free State and in the Klerksdorp District of the Transvaal. The Mineral Rights of a portion of the farm Klerksdorp Townlands No. 44, District Klerksdorp, situated adjacent to the western boundary of the New Klerksdorp Gold Estates Limited mining area, and in extent approximately **12½** morgen, were sold to that Company during the quarter.

The following is the report on work done during the quarter.

Borehole No.	Farm	Depth at September 30, 1953 Ft.	Formations traversed during Quarter: Borehole Depth (ft.) From	To	Description	Reefs intersected: Reef	Depth ft.	Value dwt.	Corrected width in.	In.-dwt.	Remarks
TL. 37/52	Klerksdorp Townlands No. 44, District Klerksdorp	6,293 In progress	5,765	5,852	Ventersdorp Lava						
			5,852	6,293	Witwatersrand Quartzites in hanging wall of Gold Estates Reef Zone						
TL. 40/52	Klerksdorp Townlands No. 44, District Klerksdorp	7,088 Original borehole completed on June 17, 1953 Deflections completed on July 23, 1953				Vaal	7,064	97.0	4.8	466	1st Deflection
						Vaal	7,068	33.6	4.8	161	2nd Deflection (Core recovery was complete in both intersections)

DRILLING OPERATIONS—During the quarter a total of **908** feet was drilled in **2** boreholes.

NEW KLERKSDORP GOLD ESTATES, LIMITED

PRODUCTION

Tons milled: **33,200**, yielding **4,330** ounces fine of gold.

Revenue from Gold	**£53,517**
Working Costs	**£54,272**
Deficit	**£ 755**
Sundry Revenue	**£ 1,297**
Working Profit for Quarter	**£ 542**
Working Costs per ton milled	**32s. 8d.**
Working Costs per ounce fine recovered	**250s. 8d.**

In addition to the above revenue, **£432** accrued during the quarter in respect of increased revenue from the sales of gold at higher than standard prices.

The working profit for the quarter, as shown above, does not take into consideration interest on loans, amounting to **£1,511,** for the quarter.

No liability was incurred for mining taxation payable to the Government in respect of the profits earned for the quarter.

DEVELOPMENT—The total footage advanced during the quarter amounted to **1,497** feet. Of **1,250** feet sampled, **825** feet, equal to **66** per cent, were classed as payable having an average value of **3.49** dwt. over a channel width of **49** inches, equivalent to **171** inch-dwt.

(The above results are based on actual sampling. No allowance has been made for adjustments necessary in the valuation of the corresponding Ore Reserve.)

PROPERTY—The Mineral Rights of a portion of the farm Klerksdorp Townlands No. 44, District Klerksdorp, situated adjacent to the Company's mining area, and in extent approximately 12½ morgen, were purchased during the quarter.

CAPITAL EXPENDITURE—Capital Expenditure amounting to **£1,307** was incurred during the quarter. Of this amount, **£1,124** was expended on plant for uranium production.

RAND LEASES (VOGELSTRUISFONTEIN) GOLD MINING COMPANY, LIMITED

PRODUCTION

Tons crushed: **485,000** yielding **82,689** ounces fine of gold.		Per Ton Crushed	
Revenue from Gold	£1,022,127	42s. 2d.	
Working Costs	£ 996,370	41s. 1d.	(241s. 0d. per ounce fine)
	£ 25,757	1s. 1d.	
Sundry Revenue	£ 16,000	8d.	
Working Profit for quarter	£ 41,757	1s. 9d.	

Working Costs per ton, **41s. 1d.**, include **6s. 3d.** in respect of development expenditure.

In addition to the above revenue, **£10,284** accrued during the quarter in respect of increased revenue from the sales of gold at higher than standard prices.

The Working Profit for the quarter, as shown above, does not take into consideration the amount, estimated at **£2,200** for the quarter, payable to the Government in Taxation and as its share of the profits in terms of the Mining Lease.

CAPITAL EXPENDITURE—The expenditure on Capital Account during the quarter amounted to **£27,312.**

DEVELOPMENT—A total of **19,910** feet of development was accomplished during the quarter, of which **7,590** feet were sampled, showing **3,485** feet, equal to **46** per cent, as payable.

Payable reef disclosures were distributed as follows:

Reef	Footage Sampled	Payable				
		Ft.	Percentage	Channel Width (in.)	Channel Value (dwt.)	In.-dwt.
Main Reef	2,115	960	45	41.9	6.35	266
Main Reef Leader	3,120	1,645	53	10.7	25.59	275
South Reef	585	230	39	8.1	27.44	223
Total Main Reef Series	5,820	2,835	49	21.1	12.70	268
Bird Reef	330	330	100	45.6	5.74	261
Kimberley Reef	1,440	320	22	50.4	5.39	272
Totals and Averages	7,590	3,485	46	26.1	10.25	267

(The above results are based on actual sampling. No allowance has been made for adjustments necessary in the valuation of the corresponding Ore Reserve.)

VILLAGE MAIN REEF GOLD MINING COMPANY (1934) LIMITED

PRODUCTION

Tons crushed: **102,200** yielding **15,865** ounces fine of gold.		Per Ton Crushed	
Revenue from Gold	£196,669	38s. 6d.	
Working Costs	£160,649	31s. 5d.	(202s. 6d. per ounce fine)
Working Profit for Quarter	£ 36,020	7s. 1d.	

Working Costs per ton, **31s. 5d.**, include **6s. 8d.** in respect of development expenditure.

In addition to the above revenue, **£2,490** accrued during the quarter in respect of increased revenue from the sales of gold at higher than standard prices.

The working profit for the quarter, as shown above, does not take into consideration interest on loan, amounting to **£302** for the quarter, nor the further amount, payable to the Government in mining taxation, estimated at **£12,500** for the quarter.

CAPITAL EXPENDITURE—The expenditure on Capital Account during the quarter amounted to **£4,111.**

DEVELOPMENT—9,286 feet of development were advanced during the quarter and **3,396** feet of old drives and crosscuts were reconditioned.

In addition, **2,835** feet of underground diamond drilling were done as an aid to development.

VIRGINIA ORANGE FREE STATE GOLD MINING COMPANY, LIMITED

DEVELOPMENT—A total of **7,331** feet of development was accomplished, of which **4,457** feet were at No. 1 Shaft and **2,874** feet were at No. 2 Shaft. In addition, **78,467** cubic feet were excavated in sumps and service bays.

Progress was retarded due to the intersection in pilot holes of water-bearing fissures, requiring cementation.

The following are the results of the quarter's development.

	No. 1 Shaft	No. 2 Shaft	Totals and Averages
Footage Advanced	4,457	2,874	7,331
Footage on Reef	1,683	538	2,221
Footage Sampled	1,615	510	2,125
Payable Footage Sampled—			
Payable Footage	1,375	55	1,430
Percentage Payable	85.1%	10.8%	67.3%
Channel Width—In.	34.8	34.9	34.8
Channel Value—Dwt.	8.74	5.19	8.59
In.-Dwt.	304	181	299

(The above results are based on actual sampling. No allowance has been made for adjustments necessary in the valuation of the corresponding Ore Reserve.)

EQUIPMENT AT No. 1 SHAFT—The **14**-inch air column installed in the shaft was connected to the compressor house. The second **4,400** H.P. permanent Electric Winder was brought into commission. Work on the headgear tips was completed and the skips are in operation. Work on the erection of steelwork of the permanent headgear was continued.

REDUCTION PLANT—Construction work is proceeding satisfactorily and is well advanced.

URANIUM AND ACID PLANTS—Levelling of the site for the uranium and acid plants was completed and excavations for foundations are in progress.

MINE BUILDINGS AND PLANT—In the No. 1 Shaft area, work was completed on the rock drill shop and on extensions to the existing shaft offices and is continuing on the permanent shaft offices, change house extensions to workshops and on the surface track layout. The erection of the **19,000** cubic feet per minute Esscher Wyss turbo compressor is proceeding.

The construction of two **600**-case permanent explosives magazines was completed.

WATER SUPPLY—The Irrigation Department is proceeding with the laying of a **27** inch main from Welkom to the Virginia Area.

EUROPEAN HOUSING—During the quarter, **72** houses were completed, bringing the total to 248 houses completed in the permanent quarters in the Virginia Township. Work is proceeding on a further 69 houses.

NATIVE ACCOMMODATION—The erection of additional rooms at No. 1 Compound was continued.

LABOUR—The Labour strength at the end of the quarter was: Europeans, **388**; Natives, **2,394.**

CAPITAL EXPENDITURE—Capital Expenditure amounting to **£1,173,458** was incurred during the quarter on shaft equipment, development, buildings and plant.

The total Capital Expenditure, including preliminary expenses, incurred to 30th September, 1953, amounted to **£7,903,014.** Included in this amount is a total of **£399,599** expended on Uranium production.

Metal and Mineral Trades

Published by The Mining Journal Ltd., 15 Wilson Street, Moorgate, London, E.C.2, and printed by Washburn & Sons Ltd., 25-27 Queens Road, Southend-on-Sea Essex. Registered as a Newspaper.